THE BUILDER

VOL. XCV.—No. 3432. NOVEMBER 14, 1908.

Contents.

	PAGE
THE MAINTENANCE OF EGYPTIAN MONUMENTS ..	515
BEWILDERMENT	516
NOTES	517
THE ARCHITECTURAL ASSOCIATION	518
THE NORTHERN ELEMENT IN GREEK ARCHITECTURE AND SCULPTURE	524
EGYPT EXPLORATION FUND	525
THE BRITISH SCHOOL AT ATHENS AND ROME AND THE BYZANTINE RESEARCH AND PUBLICATION FUND	526
ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS	526
THE SWELLING OF PORTLAND CEMENT	526
RE-INFORCED BRICKWORK	527
SOCIETY OF PAINTERS IN WATER-COLOURS	527
THE BUILDERS' BENEVOLENT INSTITUTION	528
THE SURVEYORS' INSTITUTION	529
ENGINEERING SOCIETIES	529
MEETINGS	530
FIFTY YEARS AGO	530
ILLUSTRATIONS:—	
PREMISES, HATTON GARDEN	530
AN INNER HALL AND GALLERY	530
ST. DEINIOL'S LIBRARY AND RESIDENCE, HAWARDEN	530
LANDSCAPE FOR WALL DECORATION	530
DRAWING OF DOORWAY FROM CAREY-STREET	530
THE LONDON COUNTY COUNCIL	531
APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894 TO 1908	531
ARCHITECTURAL SOCIETIES	532
LEGAL COLUMN	532
COMPETITION NEWS	533
TRADE CATALOGUES	534
BOOKS RECEIVED	534
CORRESPONDENCE:—	
A BRITISH 'VILLA MEDICI"	534
ARCHITECTURAL PUPILS	534
THE VENTILATION OF THE HOUSE OF COMMONS	534
SELECTION OF DISTRICT SURVEYORS	535
THE ROYAL INSTITUTE OF BRITISH ARCHITECTS' NEW PREMISES	535
MAGNESITE PLASTER	535
MASTER BUILDERS' ASSOCIATIONS, ETC.	535
LONDON BOROUGH COUNCILS	536
HOUSING AND TOWN PLANNING BILL	536
WAGES IN THE BUILDING TRADE, VIENNA	537
PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS	538
METROPOLITAN ASYLUMS BOARD	538
METROPOLITAN WATER BOARD	538
OBITUARY	538
GENERAL BUILDING NEWS	538
STAINED GLASS AND DECORATION	539
SANITARY AND ENGINEERING NEWS	539
MISCELLANEOUS	539
LAW REPORTS:—	
CASE UNDER THE LONDON BUILDING ACT	540
STATUTORY POWERS OF A COMPANY TO LAY DOWN WATER MAINS	540
PATENTS	540
LIST OF COMPETITIONS, CONTRACTS, ETC., OPEN	541
SOME RECENT SALES	545
PRICES CURRENT	545
TENDERS	546

SUPPLEMENT:—

REVIEWS OF BOOKS.

W. I. Travers's "Architectural Education: A History of the Past and some Criticisms of the Present System, upon which are Founded some Suggestions for the Future, with Particular Reference to the Position of the Universities"; Heinrich von Geymüller's "Friedrich II. von Hohenstaufen und die Anfänge der Architektur der Renaissance in Italien"; T. F. Bumpus's "The Cathedrals and Churches of Norway, Sweden, and Denmark"; A. Crow's "The Architects' Law Reports and Review," Vol. iii.; E. G. Holmes's "The Study of Sanitary Law"; "Proceedings of the Incorporated Association of Municipal and County Engineers," Vol. xxxiv.; "Reinforced Concrete and some Facts Concerning the Kahn Trussed Bar"; "Molesworth's Pocket-book of Engineering Formulæ"; B. Fletcher's "Light and Air: A Text-Book in tabulated form for Architects, Surveyors, and others"; E. S. Andrews's "The Theory and Design of Structures"; L. A. Waterbury's "Cement Laboratory Manual"; "The Encyclopædia of Practical Engineering," Vol. viii.; "Haworth's Practical Timber Measurer and Architect's and Builder's Tables"; F. B. Gatehouse's "A Handbook for Cement Works' Chemists"; C. N. Pickworth's "The Slide Rule"; J. F. Baily and S. Pollitt's "Woodwork."

MAGAZINES AND REVIEWS.

Illustrations.

PREMISES, HATTON GARDEN. MESSRS. NIVEN & WOOLLWORTH, ARCHITECTS.

AN INNER HALL AND GALLERY. BY MR. H. DAVIS REUTER.

ST. DEINIOL'S LIBRARY AND RESIDENCE, HAWARDEN. MESSRS. DOUGLAS & MINSHULL, ARCHITECTS.

LANDSCAPE FOR WALL DECORATION OF A ROOM. BY MR. P. A. WISE.

Illustrations in Text.

	PAGE
RE-INFORCED BRICKWORK:—	
FIG. 1. RE-INFORCED CONCRETE COLUMN OF A POWER-HOUSE	527
FIG. 2. RE-INFORCED CONCRETE COLUMN AND METHOD OF BONDING IN RE-INFORCED BRICK-ON-EDGE PARTITIONS	527
FIG. 3. CONCRETE AND BRICKWORK COLUMN, SHOWING WIRE BONDS PROJECTING FOR BONDING BRICK FACING	527

The Maintenance of Egyptian Monuments.

WHILE much prominence is given from time to time to the explorations of various scientific associations and private individuals among the relics of past ages which are scattered along the Valley of the Nile, comparatively little is heard of the efforts made to preserve temples, tombs, and other structures for the instruction of the present and future generations of men.

Work of the latter kind comes within the province of the *Service des Antiquités*, a branch of the Public Works Department of the Egyptian Government which, since the year 1899, has been under the direction of Professor Maspero. Despite the lamentably inadequate funds placed at their disposal, a large amount of really valuable work is performed by the *Service des Antiquités*, and from the records recently issued by the Egyptian Public Works Ministry it is clear that in this respect the past year was no exception to the rule.

The buildings on the island of Philæ seem to have come out once more from their annual immersion without detriment. Very little outlay has been necessary, the chief operations having been the brushing and washing of sundry wall panels to remove the mineral salts which appear after each flood has passed. Nevertheless, a little wear is observable on the surface of some of the hieroglyphics. This effect is so slight at each immersion that several seasons will probably have to elapse before it will be possible to decide whether it constitutes a serious danger to the decoration of the monument.

In the course of his personal inspection Professor Maspero found that the scaffolding erected at Edfou for the conduct of repairs to the western portico of the Temple of Horus appeared to answer requirements, but, in order to guard against the least chance of accident, he gave instructions for strengthening the lateral stays and the timbers intended to support the soffit while the wall and columns were being removed and rebuilt. Some loss of time and increase of expense were thereby caused, but these, of course, are quite secondary considerations when the security of a monument is in question. The soffit of the portico was restored and the columns were rebuilt in 1906, and last year the rebuilding of the wall was completed. It is satisfactory to learn that arrangements have been made which will enable the Department to build a girdle-wall isolating the temple from the modern town and preventing future encroachments upon the site.

On the left bank of the Nile at Thebes, where the condition of the Temple of Gournah has occupied attention for several years, it appeared that the walls and ceilings of most of the halls had nearly arrived at their limit of resistance, and that a catastrophe was inevitable unless underpinning works were taken in hand promptly. Instructions were given for these operations to be commenced immediately after the completion of work at Edfou.

Portions of the ancient retaining walls of the temple of Hathor at Deir-el-Bahari have been restored, these walls having been partially overthrown by the pressure of sand and fragments of rock falling from the hills. The digging out of the Ramesseum continues, and many of the vaulted structures in the north-west angle of the ancient girdle-wall have been consolidated, but two more years are estimated as necessary for completion of this work.

At Karnak, where various methods have been proposed for ensuring the safety of the eleven columns which fell down in 1899 in the Hypostyle Hall of the great temple, a combination has been settled on, involving connexion of the capitals by iron beams secured firmly to the face of the plinth and hidden in an architrave of brick and reinforced concrete built round them. Since the inspection of Professor Maspero the columns in the Hypostyle Hall have been made secure, and twelve other columns which were in a perilous condition have been taken down and rebuilt. This year the only work remaining to be done in the north of the temple consisted of some small finishing touches.

The next thing to be undertaken at the same place was the consolidation of the south nave and the reconstruction of the Pylon of Ramses II. The scaffolding erected in 1900 between the two towers will be taken down, and a system of reinforced concrete beams built, replacing the lintel of the middle gate. It may be added that the court which separates the two pylons of Thoutmosis III. has been cleared in part; the foundations of one pylon and the statues in front of the two obelisks flanking the gateway have been uncovered and found to be in a good state of preservation. The wall bordering the Eastern Court has been cleared on both sides, this work leading to the

discovery of a postern leading to the sacred lake and of a range of cynocephali which guarded this entrance from the shore of the lake.

At Negadeh the tomb discovered by Mr. Morgan, and believed to be that of Ménes, has suffered very much, the rains and excavations of recent years having caused much disintegration of the dry brickwork in the walls that Professor Maspero had reluctantly to give up the idea of doing anything for the preservation of the building.

In 1906 a methodical exploration was commenced of the district between Philæ and the Soudanese frontier, this being imperative owing to the recent decision to raise the Assuan dam and to submerge new regions. Mr. Weigall, one of the chief inspectors of the Service, twice visited Nubia in the same year, and not only examined the actual state of the monuments, but also explored many of the tombs, discovering inscriptions which revealed the names of several forgotten Pharaohs.

At Esneh, Asfoun, Luxor, Karnak, Keneh, and Denderah, the Antiquities Service have had their hands full in repressing thefts of *sebakh* and antiquities, and in looking after contraventions of various regulations on the subject of excavations. At Denderah, the mound which indicated the temple has been cleared, the façade of the pronaos is free from sand, as well as the waterworks, the monumental gate of the Flaviens and the Antonins, and the section of the wall screening this gate on the north.

On the left bank of the Nile at Thebes a wall of dry stone has been built enclosing part of the mound of the Sheik Abd-el-Gournah recently cleared. Access to the tombs will not be obstructed, but henceforward the thieves who come to demolish the sculptures so as to obtain fragments will be subjected to penalties more severe than those previously in force. It is to be feared, however, that no penalties will put a stop to robberies of the kind, which are attributed by Professor Maspero chiefly to the indiscreet zeal of savants and their agents, who, with the object of furnishing museums with interesting objects, order from local merchants relics of specified age, and indicate to them the tombs known to contain antiquities such as they wish to buy. The purveyors never hesitate to attack the tombs thus mentioned, and so in order to facilitate the study of antiquities for European and American archæologists the destruction of the most precious monuments is unintentionally provoked.

To illustrate the effect of this unfortunate practice Professor Maspero states that in the summer of 1906 thieves entered the *Tombeau des Vignes* and attempted to remove several of the paintings decorating the funeral chamber. They only succeeded in destroying them, the glazing upon which the pictures are painted being too thin and friable to permit removal without injury. This disastrous attempt at pillage, and that which previously ruined whole quarters of the necropolis of Sakkarah, are attributed by Professor Maspero entirely to the indiscretion of relic hunters in foreign countries.

In the inspectorate of the Pyramids a variable measure of success has attended the fight of M. Quibell against unauthorised diggers and the *sebbakhin* who exploit without permission the mounds of old Cairo. The difficulties encountered in the work of clearing antiquities in the Pyramid district have been great, especially near Abousir, where the ruins of the ancient temple have unfortunately passed into the hands of various native proprietors. Owing to the increased value of land and the speculations resulting therefrom the protection of ancient sites has become more difficult than ever. All along the Valley of the Nile proprietors great and small seek to seize upon plots of land hitherto unoccupied, and do not shrink from the employment of any means, legal or illegal, to serve their ends.

One example among many will illustrate the manner in which the Antiquities Department have to fight in the interests of archæological science.

In October, 1906, the Inspector of the Fayoum learned that a rich proprietor had seized an area of land representing nearly the entire ancient site known as Medinet Madi in the district of Gharak, and had arranged to draw water from a neighbouring irrigation canal for distribution upon the land appropriated. The native official who protested against this invasion was beaten by the landowner's workmen. When the Inspector came upon the scene he appealed to the Moudirieh, and, the act of usurpation being particularly flagrant, an order was issued for suspension of the works commenced. This order was only obeyed in appearance, for before filling in the trenches by which water was to be conveyed to the site irrigation conduits were carefully laid, rendering the closure of no avail. A fresh appeal to the Moudirieh then became necessary, but that authority, sympathising, as usual, with native wrong-doing, opposed the action of the Antiquities Service, until at last, after much trouble, the matter was adjusted satisfactorily by the Minister of the Interior.

As in previous years, the Department have been obliged to bring before the tribunals numerous fellahs who dig antiquities without permission, and to defend actions brought by self-styled proprietors claiming antiquities discovered in the *sebakh* during the execution of public works by different State Departments.

It should here be mentioned that the scientific mission of the University of Chicago under the direction of Mr. Breasted has done valuable work in the Soudan by opening up and photographing buildings, hypogea, and inscriptions of the Pharaonic epoch. This expedition came at a very opportune time, for the increased water area of the Assuan reservoir due to the projected raising of the dam will re-cover, for a more or less extended period every year, some of the monuments hitherto standing high above the river level. Therefore the American mission will have contributed in no small measure to save what remains of the buildings before the time of immersion comes.

Apart from help given by official commissions from the Universities of Chicago and California, two private Americans have carried out useful works at their own expense. One of them, Mr. Dow Covington, has cleaned out the passages and air ducts of the Great Pyramid of Ghizeh, thus ventilating the King's Chamber so as to render its atmosphere more tolerable for visitors.

At the Cairo Museum the injury caused to the ceilings by the rainstorm of 1905 has been made good, and, thanks to reconstruction of the terrace roofs, rain will not in future be able to drip directly upon the monuments in the various halls. Structural alterations commenced in 1905 for regulating the admission and improving the distribution of light have been completed as far as permitted by financial conditions. Although the general reclassification of the antiquities in accordance with an intelligible system cannot be taken in hand before next year, preparations for this much needed reform are well advanced, and by the enclosure of numerous small objects behind glazed partitions the facilities for pillage will be much diminished.

The theft of antiquities is one of the modern plagues of Egypt. It prevails throughout the whole land and extends even to the staff of the National Museum. This highly developed acquisitiveness must be particularly discouraging to those who are devoting themselves with so much zeal to the preservation and care of the priceless monuments and relics still remaining in the land of the Pharaohs.

BEWILDERMENT.

(FROM A CORRESPONDENT.)

TO rise from the dull facts of earth and soar in the sky is the essential privilege of the XXth century. Our lecturers are apparently not slow to avail themselves of this privilege, and, leaving the past behind, the old-world limits of architectural criticism are soon outpassed. Through clouds of "scale" and "breadth" and pungent detail we catch swiftly dissolving views of a new architecture, until we are finally landed once more on solid ground in the condition of mind suggested by the title.

The architectural energy of the two last and present passing generations of English architects may well be looked upon hereafter as having created a school of lasting interest. It would be lamentable if so much groundwork that ought to culminate in a rebirth of architecture, or at least in some monument of unquestioned rank in the world's history, should be jeopardised by mere brilliancy of exposition on the part of our teachers. Limelight flashes on a single figure will produce a definite if delusive clearness of vision, but it requires some sense of proportion and memory of facts to recall that there are others in the background of shadows thus created. Moreover, it has happened that the wielder of the light has focused the wrong unit in the crowd.

Isolate a single monument, and it is the work of giants or of angels. In how much the aspect differs according to the trained perception of the beholder! The Pantheon is nought but a huge cock-pit, where there is no realisation of the long stages of domical evolution. History has two aspects, that of a chain of "Prophets of the Antique World" and

"Saviours of Society" in modern empires, as opposed to the tale of cumulative efforts by which the labouring generations of men slowly develop from stage to stage. By all means let us praise great men, but there is great responsibility in the choice of the image to be placed above the altar of our devotions; remembering the danger of encouraging that type of charlatan whose *rôle* is always to be the sole architect of his epoch.

Michelangelo is a great name to play with, but the qualities of soul that fitted him to wind up the semi-bankruptcy of the Italian Renaissance, at a particular crisis, do not necessarily qualify him for our blind worship as the supreme mind of the architecture of the Renaissance. If we must fall on our knees at St. Peter's we may well prefer to sink the architect in us and find the mood of the following passage:—

"But when, having traversed the length of the nave without uttering a word, he passed from under the gilded roofs, and the spacious dome lofty as a firmament expanded itself above him in the sky, covered with tracing of the celestial glories and brilliant with mosaic and stars of gold; when opening on all sides to the transepts, the limitless pavement stretched away beyond the reach of sense; when beneath this vast work and finished effort of man's devotion, he saw the high altar, brilliant with lights, surrounded and enthroned by its panoply of clustering columns; when all around him he was conscious of the hush and calmness of worship, and felt in his inmost being the sense of vastness, of splendour, and of awe;—he may be pardoned if, kneeling on the polished floor, he conceived for the moment that this was the house of God, and that the gate of heaven was here."

There is no building probably in the world that so gains in drawings and photographs as St. Peter's; the necessary concentration obliterates the appalling coarseness and recklessness of detail that disfigures the church both inside and out. That St. Paul's has an easy supremacy in beauty of handling will be the thesis of professorial lectures to follow; while as regards the internal majesty and sublimity of the dome there is abundant testimony to convince the most hesitating student. Octogenarian Taylor, of "Taylor and Creasy's Rome," tells how they used to take architectural visitors first to the Pantheon Order and then to that of St. Peter's, and always the view elicited the same reply as to the scale, viz., that they were about the same; being, in fact, one-half.

Italian architecture must be studied on the spot, and with a discriminating attitude of mind. That strange and wonderful amalgam of fiery initiative, and the capacity for the most mechanical and endless toil, that carried the Roman arms throughout the world, survives now and pervaded also the Renaissance.

Thus there is nothing strange that Bramante should plunge headlong into the erection of the greatest church and palace in the world, and that the hasty piers should fail before the dome was even begun. In like manner, Michelangelo and Raphael would leave chisel and brush and become architects with even greater facility than is recorded by Swift of Vanbrugh:—

"Van's genius without thought or lecture
Is hugely turned to architecture."

Sober architectural criticism takes these men of imagination into account, but does not level with the ground the solid structure of architectural development to make a cairn to their memories.

In the Gothic revival it used to be said—"Give us French ideas with English detail." Do not let us mislead our present-day students, and lose the distinctive beauty and reserve of English work, by directing their attention in a spirit of undiscriminating eulogy to the last phases of the work of the great Italians.

NOTES.

Rates and the Building Trade.

In our issue for October 31 we commented upon the adverse influence increased rates had in especial upon the building trade, and a question asked in the House of Commons on the 3rd inst. has some bearing on this subject. Mr. Burns, in answer to the inquiry put to him, stated that at the end of the year 1905-6 the outstanding debt of the local authorities in the United Kingdom amounted to 564,645,200*l.*, the amount of the National Debt at the same period being 788,990,187*l.* The National Debt is everyone's concern, and if a Government reduces it by a few millions it poses as the deliverer of the national credit; the Local Loans are no one's business, and are allowed to roll up unheeded. Yet on certain trades, and especially the building trade, high rates have a far more crippling influence than high taxation. Taking the outstanding loans for England and Wales alone at the end of the year 1874-5, the National Debt was 767,268,555*l.*, the outstanding Local Loans 92,820,100*l.*, or 12·10 per cent. of the National Debt. By the end of the year 1903-4 the National Debt was 794,498,099*l.*, but the Local Loans 393,882,146*l.*, or 49·58 per cent. of the National Debt, the average amount of the outstanding loans per pound of rateable value having risen from about 16*s.* in 1874-5 to 2*l.* 0*s.* 5*d.* in 1903-4. What would be said of a similar increase in taxation, and what Government would have remained in office directly responsible for such an increase? Yet taxation would have been spread over every class of industry, whilst house property is that which has to bear the brunt of increased rating. It is hardly to be wondered at that employment is handicapped by conditions such as these, and now the last straw is to be added by imposing on the rates a burden spread over many years in favour of the unemployed, the unemployable, and the strikers of all classes.

The Marble Arch.

The gates and lamps for the enclosure in the rear of the Marble Arch have now been completed and are in process of being fixed; when this is done we shall be able to judge of the total effect. The designs for the gates and lamps were illustrated in our issue of April 11, when we commented favourably on the design as being of good architectural character, though not presenting any very remarkable artistic quality. The completion and setting up of the work has been made the occasion of the usual circulation of puff paragraphs to the press, which has attended the whole of this work from the first; who circulates these we do not profess to know; but they evidently serve the intended purpose with the daily papers. The truth is that the whole scheme, in an architectural sense, has been completely bungled, as the placing of the Constitution Hill arch was bungled; as these things always are bungled in London. In the desire to secure the most convenient carriage-way in a utilitarian sense, the Office of Works has entirely neglected the architectural principle of axial setting out, and the arch is left standing at one side of an irregular *place*, with nothing to balance or centralise it. As a roadway it is a convenient plan; as a scheme for architectural effect (which is what was the proposed object in the first instance) it is a complete and absurd failure; the arch might almost as well have been pulled down as left in its present position. We had the opportunity the other day of examining a series of studies by students of the Architectural Association for the treatment of the Marble Arch and its surroundings (which had been set them as a subject), and among these plans by young students there were at least two or three which were infinitely better than that which has been carried out.

Underground Passages in Streets.

In consequence of numerous accidents owing to the increased vehicular traffic in the streets, the Paris Municipality are about to make a beginning, at all events, in following the example set in London at the Mansion House, of providing underground passages for foot passengers at the most dangerous crossings. As a first trial, the "Administration de la Voie Publique" have commenced the works for the formation of one of these passages under the Avenue des Champs-Elysées, opposite the Rue Marbeuf. If the result is satisfactory similar passages will be constructed at the Place de la Trinité, the Place de la Concorde, the Carrefour Drouot, the Faubourg Montmartre, the Boulevard des Italiens, the Gare St. Lazare, and the Rue de Rivoli (at the angle of the Boulevard Sébastopol). Such crossings are more needed in Paris than even in London, as a matter of safety, since there is hardly any of the organised control of traffic by the police which is so well carried out in London. But the system certainly ought to be carried further in London. A new underground passage is promised under the space opposite the Middlesex end of Blackfriars Bridge; but there ought also to be underground passages at Charing Cross, Hyde Park Corner, Oxford Circus, and Piccadilly Circus, as a matter of safety to the public from vehicles going, one may say, all ways at once; and in some other places in order to save time. At the junction of the Strand and Wellington-street, for instance, where the traffic is concentrated in two cross directions and the two streams are stopped *en bloc*, alternately, by the police, there is no danger; but there is a great deal of delay when the accumulated mass of traffic moves forward in an unbroken phalanx after a stoppage, and no one can cross the street till it is cleared off. The London County Council ought to take this matter in hand, as an important one both for public safety and convenience.

Street Trees. TWO PAPERS printed in the *Journal* of the Royal Sanitary Institute for November are of interest to those who wish to improve the streets of London and other cities. Mr. W. W. Pettigrew, Superintendent of the Parks Department, Cardiff, gives some practical hints on the choice and planting of street trees, useful data of the same character being given by Mr. C. C. Smith, Surveyor to the Sutton District Council. In the selection of trees a certain amount of discrimination is necessary. For instance, the plane, justly characterised by Mr. Pettigrew as "the ideal town tree," will not thrive on chalk, and the lime, which grows well on chalk, is not successful on clay. Again, the poplar, which suits places on the sea coast and flourishes in wide thoroughfares, is not to be recommended for cities with narrow streets, and chestnuts are generally inadvisable because of their dense foliage and the incentive they offer to the throwing of stones by youthful persons during the time of harvest.

Italian Forestry. AT the present time, when the advisability of reafforesting available sites in the United Kingdom is under consideration, the Report issued by the Italian Ministry of Agriculture is of special interest. Commissions were appointed more than thirty years ago to supervise forestry operations in twenty-five provinces, but it cannot be said that any remarkable activity was displayed until last year, when nearly 70,000 acres were replanted. Nevertheless, the collective work of the past forty years has included the distribution of some 130 million trees, and over 200,000 lb. of seed. Forest fires and reckless destruction by small landowners continue to cause much havoc, the number of fires last year having been nearly 1,300, representing a loss of about 40,000*l*. The energy displayed during 1907 may be attributed to recognition of the fact that the predicted timber famine is no improbable contingency.

Burnham Beeches. THE announcement that the officials of the Corporation of London who are in charge of the famous Burnham Beeches have succeeded in cleansing the trees of the fatal little insect which was destroying them, is of more than local importance. A committee of skilled persons was appointed last year to investigate and report on this matter, and their report was distinctly pessimistic. The Corporation, however, decided to treat all the trees, young and old, and the result has been—apparently—to cleanse them altogether, so that their destruction is prevented. It seems clear that if this fatal *coccus* could destroy the beeches and oaks, young and old alike, at Burnham, it could be equally destructive in other places, and that the supply of English timber, already very limited, might be further decreased. It is a desirable object to increase the timber-producing area in Great Britain, and if at the present moment an insect pest begins to destroy the supply, the advantages accruing from planting more land will be greatly diminished and the project discouraged.

Incombustible Materials on Railways. IN his Report on the fire which occurred last month in a passenger train at Swiss-cottage station, Major Pringle absolves electricity from blame, attributing the outbreak to the use of naphtha lamps. One of the points he urges upon the attention of the company is that greater employment should be made of non-flammable woodwork and incombustible materials in the construction of their passenger cars. We heartily welcome this expression of opinion. It would be quite easy, as he suggests, to line luggage compartments with metal in place of soft wood, to provide asbestos sheets for the protection of the deal roof, and to make the interior fittings of passenger compartments safer by using timber treated so as to render it non-flammable. Further, there is no excuse for the continuance of timber platforms, signal-cabins, and other structures—in underground railway stations. Reinforced concrete and other incombustible materials are perfectly adapted to these purposes, but we cannot expect them to be used by railway companies unless some form of compulsion is applied.

Hospital Design. OUR contemporary, the *Hospital*, draws attention to what is described as "a new system" of hospital design, invented and patented by Dr. Sarason, a German sanitarian. The system is suitable not only for hospitals, but also for sanatoria, flats, and other buildings of two or more stories. Briefly, it is an attempt to provide a continuous balcony or terrace on each floor, along the sunny side of the building, in such a way that the balconies and rooms below shall receive an adequate amount of sunlight. This is effected by setting back the front wall of each upper story about 1½ metres (say 5 ft.) behind the front wall of the story below it; each balcony is about 2½ metres (say 8 ft.) wide, and projects about 3 ft. in front of the wall below. In the case of a hospital pavilion, the lowest or ground-floor ward has a width of 9 metres, the first-floor ward a width of 7½ metres, and the second floor 6 metres. In a sanatorium the corridors along the back of the building are reduced in width on the upper floors, so that the patients' rooms are not unduly narrowed. There can be no doubt whatever that the system possesses certain advantages, and if by adopting it an additional story can be obtained, the extra cost will not be very great.—We fail to see, however, what part of the system—beyond mere details of construction—can be the subject of a valid patent in this country.

Mr. Lishman's Exhibition. AT the Ryder Gallery, 47, Albemarle-street, there has been on view for the last two weeks a small exhibition of water-colour drawings of architectural subjects by Mr. Frank Lishman, A.R.I.B.A., which are interesting both from their subjects and their execution. They include views of many celebrated buildings of England and the Continent, and they are not mere architectural drawings, but good examples of picturesque treatment in water-colour. Among the best are the Ponte Vecchio and the Palazzo Vecchio, Florence, and the south aisle of the Duomo, Pisa. A small drawing of "Siena, after rain; evening," is a very good study of the old town under a special aspect; and in the same category may be mentioned the little drawing of "Chartres; after sunset." Interspersed among the architectural drawings are a few studies of landscape effect. The exhibition closes this week, but there is time for those who wish to look in and see it on Saturday.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of the Architectural Association was held on Friday last week at No. 18, Tufton-street, Westminster, S.W., Sir A. Brumwell Thomas, Vice-President, presiding in the absence of the President, Mr. Walter Cave.

The minutes of last meeting and some nominations having been read,

Mr. C. Wontner Smith, Hon. Secretary, made the following announcements:—

Meeting of Debating Society on November 13. Paper by Mr. T. L. Dale on "Is Agreement Possible in the Principles of Architectural Design?" At 7 p.m.

Meeting of Camera and Sketching Club on November 19. Paper by Mr. Patrick H. Hepburn on "Notes on Some French Romanesque Churches, with Special Reference to Planning and Vaulting." At 8 p.m.

Conversazione to be held at 18, Tufton-street on Wednesday, November 25, at 8 p.m. Extra tickets may be obtained in the office; single tickets, 3s. 6d. each; double tickets, 5s. 6d.

The following gentlemen were then elected as members:—L. S. Ford, Waldingham, Surrey; J. R. Wallocombe, Stockwell, S.W.; W. J. Halls, Loughton, Essex; H. S. Pollen, Blackheath; V. O. Rees, London; W. H. Martin, East Croydon; E. W. Stubbs, South Croydon; H. G. Holt, Mapperley.

The Origin of the Sense of Taste in Art.

Mr. Felix Clay then read the following paper on "The Origin of the Sense of Taste in Art":—

"I feel that the paper I am now proposing to read requires a word of explanation, if not something like an apology. For although taste, in some form or other, lies at the very basis of successful work, whether in architecture or any other branch of art, and that, therefore, any suggestions as to the development and training of this faculty would be of great use, my inquiry deals solely with the question as to how it is we come to have such a faculty at all, and does not make any suggestions of the least actual use. It seemed to me, however, that a discussion of such a point, if of no practical value, is at all events of considerable interest, and although one successful example of the faculty in the production of some beautiful work of art is worth all the philosophy of art and æsthetics put together, there are times when a natural curiosity leads one to inquire into the origin and basis of this highly-important quality.

I have intentionally headed my paper "The Origin of the Sense of Taste," because I am anxious at the outset to make quite clear upon what aspect of taste I am proposing to make some remarks this evening. I wish at once to put on one side all intellectual judgment of an object, all the ideas aroused by any meaning or expression that it may have, all the carefully-taught and trained "tastes" which may give us a liking for one particular style or another, in order to isolate and consider the simple, direct feeling of pleasure that we feel as a kind of intuition when we see certain forms, colours, etc., or hear certain sounds.

We all know by experience the sudden flush of feeling with which we greet some beauty that particularly appeals to us, which is quite a different thing from the nicely-balanced judgment of pros and cons, by which we may decide that a thing is correct according to rule, and is, therefore,

good. "I always know," William Morris is reported to have said, "when a thing is good, as I feel warm across here"—passing his hand over his waistcoat.

I need hardly labour the point. We all have a fund of natural instinctive likes and dislikes in colour, form, proportion, and so on. However little of an artist a man may be, he still chooses, and with care, his furniture, his wall-papers, his waistcoats, his neckties, and so on, and however much we may disagree with his selection, he evidently is affected strongly by something in the appearance of things quite apart from the utility or otherwise of the object. Everyone is actuated by likes and dislikes, which when properly cultivated and developed become art principles.

How Did This Sense Arise?

Now the point I wish to bring forward for consideration is: How did this quality arise? Why should we like some things and dislike others, when they are both equally useful or equally useless? Are we to treat taste as an ultimate inexplicable fact beyond which all inquiry is idle—sufficiently explained by the simple statement that we are born so? As Ruskin puts it in "Modern Painters," "Why we like some things and dislike others is no more to be asked or answered than why we like sugar and dislike wormwood," going on to lay down that it was the simple will of the Deity that we should be so created. That is some time ago, but in a book published last year, "The Essentials of Æsthetics," a volume which resumes the conclusions of a number of larger works, the writer, Mr. Raymond, dismisses "taste" in a few lines at the end of the chapter on beauty as "that within the mind enabling one to recognise an artistic effect, and to judge in some way of its quality."

We are so much accustomed to take our tastes for granted that it seems almost gratuitous to ask for reasons. And yet one cannot help the feeling that there ought to be some reason to account for our natural delight in symmetry, proportion, balance, rhythm, harmony, and our natural discomfort in their absence. The sense of taste in food has, as it were, a natural analogy with the sense of taste in the eye and ear, though the former belongs to what we call the lower senses, and has not, like that of the eye, been raised into the higher or ideal regions. The terms applied to one are transferred freely to the other. We see at once with our present knowledge of evolution and the struggle for existence the answer to Ruskin's question. We like the sugar because it is a necessary constituent for the body; while wormwood is a poison, and any man or animal who liked or found a pleasure in things that were deleterious would be quickly eliminated. Natural selection involves the liking for the suitable and the avoidance or dislike of the unsuitable. If we follow up our various likes and dislikes we shall find at the bottom they rise from some necessary power of selection that helped to determine survival. We must sooner or later find in what way this curious liking for harmony, balance, symmetry, etc., could have been in its early stages of direct value to the organism in the struggle for existence.

What Do We Mean by "Beauty"?

It is obvious that taste in art is primarily the selection of the beautiful, and before we can proceed to consider how the taste for the beautiful could have arisen, there are certain points with regard to beauty that must be cleared up.

Roughly speaking, by beauty we refer to something in the appearance of an object that gives us a feeling of pleasure in the simple contemplation of it. I wish again to emphasise the point that in dealing with beauty in its simplest stage we must confine ourselves to the simple sensation, and rigorously exclude all intellectual judgments of the facts or ideas aroused by association, suggestion, etc. The age, historical association, memories, etc., of a building are not true æsthetic qualities, but—and the point should be cleared up at once—it so often happens that the associated ideas aroused by a beautiful thing and the feelings and emotions they excite are so much stronger than the simple sense response that they almost instantly monopolise the whole attention, and thus seem to be the beauty that is felt. We are so anxious to get a meaning and ideas that we are apt to neglect the simple sensation of pleasure in the beauty, in favour of the intellectual idea. This aspect of beauty is a fascinating and delightful subject, which it is hard to keep off, but now we are considering the simple sensation with its feeling of pleasure apart from conscious recognition of its various attributes. The word "conscious" is of the greatest importance. It would take me too far from my subject to discuss the question of the subconscious mind, but it is within the experience of everyone that when we have consciously done or thought of a thing a sufficient number of times it becomes, as it were, automatic, and the appropriate responses are made without any conscious direction. A certain object or a certain shape may appeal to our mind by its obvious utility, and after a sufficient time the recognition of this useful quality ceases to be noticed consciously, but the object at once strikes us pleasantly, the useful qualities being recognised subconsciously, and all we are aware of is the resulting feeling of pleasure in looking at the object. This works in many and somewhat subtle ways, and many a thing gives rise to a thrill of pleasure that has become truly æsthetic—*i.e.*, removed from all idea of practical value or advantage, which nevertheless is due to certain processes of thought, if they can be so called, carried on below the threshold of consciousness, the resultant of which rises in the mind as a simple intuition; and many of our tastes, or sudden liking for some persons or some places that seem so capricious and so sudden, are due to this comparison and memory of numerous small points of likeness to things or persons previously experienced, but which we should be incapable of consciously recalling. Just in the same way that we may come into a room and see that the furniture has been altered without in the least being able to say or recall how it was actually arranged before, so we remember persons and places, although we cannot call up any idea of what they were like. This point of the subconscious recognition is one of great importance in the question of the cultivation and formation of taste, as it makes it possible by training and practice to get what seems to be an absolutely unconscious feeling for things which have previously been consciously perceived and recognised.

Perception of Beauty a Subjective Quality.

Another point upon which emphasis must be laid is that of the subjective nature of our taste for the beautiful. Beauty consists in the pleasure that it gives to our æsthetic sense; that is to say, that we find that certain objects, views, sounds give rise to pleasant feelings. Now it is a psychological commonplace that whenever our feelings are aroused in connexion with an object they are at once projected outward and considered as qualities of that object. This is particularly the case with feelings aroused through the eye; the sensation in the organ itself is so slight that it is disregarded, and we naturally conclude that everything we see is actually a quality or part of the object. For example, in the case of a needle, we consider the sensation of its colour and brightness which it has under ordinary conditions as qualities which it has itself exactly in that form, while its painfulness exhibited under suitable circumstances we accept as subjective. So with beauty we are apt to consider it as in some way a quality of the object in which we perceive it, and yet it only exists in our perception of it. Beauty is our expression for the particular way in which we are affected; a beauty not perceived is a pleasure not felt; it has no objective existence.

The sense of beauty is subjective, growing with the growth of the individual, widening and expanding with his increase of understanding and powers of perception, the standard rising always with his progress to a higher life, until what was once only a physical pleasure becomes transformed into an ideal delight.

Is there an Absolute Ideal?

Is there, then, such a thing as an ideal beauty—an absolute—towards which our efforts and attempts may be considered to be tending, of which glimpses are at times vouchsafed to man? Once the relativity of beauty is realised, this question does not exist; or to put it in another way, it does not matter, it has no practical significance. Beauty as we know and feel it is due only to the particular arrangements and functions of our sense organs, evolved in and developed to suit a particular environment. We cannot imagine anything of which we do not receive the suggestion in our sense-experience; if our environment had been different, it is probable, or at least possible, that we should have developed different senses or a different response to things, in which case beauty would lie in a different direction—be something different to what we know.

As Mr. Balfour in his address as President of the British Association at Cambridge in 1904 expressed it, "Eyes, ears, and all the mechanism of perception have been evolved in us by the slow operation of natural selection, working only through immediate utility. Our organs of sense perception, upon which are based all our intellectual powers, were not given to us for the purpose of research; nor was it to aid us in meting out the heavens or dividing the atom that our powers of calculation and analysis were evolved from the rudimentary instincts of the animal."

Exactly the same line of argument applies to our faculty of appreciating and creating the beautiful; it is a higher process derived from originally useful and necessary functions. We have no right and no need to deny an absolute beauty, but all that we know shows that beauty is relative to us, existing in our perception of it, not that it is something having an objective existence that we may or may not be able to see.

We can see an instructive and illustrative analogy in the sense of the ludicrous. I may see a man dressed in a way that is to me irresistibly funny and moves me to laughter; to himself and his countrymen his appearance is normal and satisfactory, and he may think me equally absurd to look at. In neither case can we consider the ludicrousness to be in the object, and though we naturally enough describe the thing or person as funny, we are quite ready to admit that a thing is only ludicrous if some person sees it as ludicrous. So exactly has an object beauty; it is beautiful to those in whom it arouses the responsive thrill, just as a thing is funny to those who feel amused or inclined to laugh at seeing it; in both cases the effect is purely relative and subjective.

The Personal Equation.

An object may be beautiful to one, ugly to another; probably anything might be beautiful if the right perceiver were there. Are we, then, at liberty to say that all things are equally beautiful, or would be if we had enough knowledge, because any one thing may in appropriate circumstances be attractive? Obviously not; it is, as we have already pointed out, only by the faculties that enable as to discriminate that beauty exists at all. We can sweep away with a feeling of relief, only to be appreciated by those who have gone through the discouraging experience of trying to read works on æsthetics, all the cumbrous and complicated

definitions of beauty. A thing is beautiful to me because I like it, and it moves me emotionally in a particular way. I do not like it because it is "beautiful," because it conforms to some abstract laws of composition to be discovered by research. Laws of composition are, after all, only the sum of what is found successful, and theory lags but slowly after practice. We may take a parallel from another sense, one which has not been able to rise and serve the higher intellectual functions. I like a certain food and call it nice; I do not know that it contains suitable body-building constituents. I merely like it, and, like Oliver Twist, ask for more. That thing is beautiful because it has or suggests qualities that in some way, or at some time, are or have been suitable or useful. I am quite ignorant of the fact; I merely like it. In both cases, of course, knowledge of its useful character may affect the total feeling; in both cases we may make mistakes, and the more artificial the conditions the more we trust to intellect and less to simple feeling. Beauty has been well defined by Professor Santoyana as "Pleasure considered as a quality of a thing."

Mechanism of Sensation.

Some thirty years ago Grant Allen in his Physiological Æsthetics traced very clearly the connexion between colour and sound and the organs of sensation by showing that the mechanism of the eye and ear, by its sympathetic response to vibratory stimuli, falling on it with suitable intervals for recovery, gave rise to pleasurable feeling, and further, how harmonious rhythm causing enhancement of function would increase the pleasure. This established the fact that the pleasure or the reverse was directly traceable to physical structure. Why such a structure should be developed, and why it was advantageous for an animal to have a feeling of pleasure in certain forms more than others, he did not investigate. But to-day, when we realise with ever-increasing clearness that every function with the necessary structural modification is developed in response to the need for better adaptation to environment, or for some quality that will confer an advantage in the life struggle for the individual or the race, and that pleasure is the concomitant of activities useful or advantageous, and so leading to their repetition, we are bound to ask how these particular qualities—*i.e.*, pleasurable response to certain colours, forms, lines, symmetry, balance, rhythm, etc.—could have been useful; what form their prototype could have taken, and in which of the early and primitive instincts we have the basis of artistic appreciation. What is its ultimate origin?

I have already drawn attention to the fact that we find that our senses, and in a rough way our likes and dislikes, can be traced back into the animal kingdom, becoming less and less differentiated and less keen until they finally merge in the lowest organisms in one single faculty of sensation, probably that of touch. So we shall find the prototype of all our instincts in a more rudimentary form in the animal kingdom, and in suggesting that we shall also find there certain instincts that afterwards develop into artistic taste in the human race. I wish to make it quite clear that I am not attributing to animals any æsthetic sense in the usual meaning of the term. An animal has all the sense organs that we have, and is, as far as sense perception goes, as capable as we are of collecting the data upon which all the science of the world is based; but he has not the reasoning faculty. In the same way, I suggest that the elements, so to speak, are to be found in the animal kingdom, but the human brain is required in order to arrive at æsthetic feeling.

Development of Sensation.

Now, having asserted that some natural origin must be found for our instinctive preferences, it becomes incumbent upon me to make some suggestion as to how they could have arisen, and in order to do this I must digress for a moment into the domain of natural history. I want you to imagine a primitive organism of a rudimentary type developing into the various stages of advance under the stress of the struggle for existence.

From the earliest protoplasmic cell living matter has the quality of sensibility; or we may describe it, a tendency to, or away from, any source of stimulation according to the object, *i.e.*, whether it is suitable or the reverse; it is in this choice of the suitable as opposed to the unsuitable that progress lies, the struggle for existence being always at work picking out the slight variations in structure, or chemical constituency and so on, that are of use to the organism. Thus we see that one of the earliest of all qualities to be developed is that of taste, the selection of suitable food, suitable position, etc.; this would be, in the early stages, devoid of consciousness, and not until a certain point of development was reached would consciousness appear, and with it the sensation or feeling of pleasure or of discomfort. I have not the time to go into this in detail, but we may accept the conclusion that like and dislike are not originally determined by pleasure or the reverse, but that our likes and dislikes are the present forms of originally necessary reactions formed by physico-chemical reflexes which drew the organism towards the wholesome or suitable, or away from the dangerous or unsuitable.

We have already come to the conclusion that however far we analyse our feelings for beautiful things, and whatever explanations we can offer, we are finally brought down to the fact that at the bottom as a basis there are our simple likes and dislikes. Even if we are satisfied with an explanation that traces the rise of art and the æsthetic activity to social uses, and a secondary utility, developed at a comparatively late stage in the struggle for existence, we are still left with the difficulty of accounting for the fact that we have an innate sensuous pleasure in certain combinations of colour, sound, or form, in rhythm, balance, symmetry, and so on, which is previous to and independent of intellectual appreciation. Obviously these qualities must have been, in the early stages at which the basis of our likes and dislikes were developed, in the position of determining a tendency towards (like for) the suitable, favourable or necessary, and away from (dislike) the unsuitable or dangerous.

Influence of Environment.

Of all the factors that determined survival in the early stages suitability to environment was the most important, and the greater part of the energies of the organism were devoted to finding a suitable surrounding, or of adapting itself to that in which it was placed. It would often happen that the conditions — temperature, direct sunlight, degree of dampness, and so on, or the environment itself—would change somewhat gradually, so that the organism that varied in the direction of a more delicate sensibility or a quicker reaction would be at an advantage in getting the first intimation of an unfavourable change, the same sensibility would if the animal were moving give the earlier indication of, or detect from a greater distance, suitable conditions, *i.e.*, conditions which were so to speak in harmony with the organism. The animal with the more delicate sense would begin to make whatever movements or exertions it was capable of directly there was some adverse change in its surroundings, while the slower would simply prove the alteration for the worse by dying.

Again, to all the animal kingdom, from the unicellular amœba to early man, the familiar is the safe and the unknown or unfamiliar dangerous. An organism developed in a certain environment is inevitably provided with certain tendencies or instincts, and with the necessary structure to suit the particular conditions; obviously, then, it is of immense value to have some means by which a preconscious animal, with no memory or intelligence by which to recognise the right environment, would, so to speak, feel its surroundings, which it would do probably, by simply coming to and remaining at rest in the habitual and therefore suitable environment.

The same line of reasoning applies to external objects; and, as the animal rising in the scale of development increases in activity and power of movement, becomes of still more importance; the known, the easily recognised, is safe, while, generally speaking, the unknown or strange must be regarded as dangerous, or at least treated with suspicion. Consequently it is easy to see that at a very early stage in the development of feeling and consciousness there would be a sense of pleasure in the recognition of the familiar, and of discomfort in the unknown; for it might possibly be dangerous, and was pretty sure to be unsuitable. The pleasure in simple recognition is very great, and persists with a strength that is often apt to be overlooked. To a child, a savage, or even the ordinary person, to recognise, to be able to name, and thereby to have at least the feeling of understanding, is a great pleasure. To many people there is a distinct pleasure in finding in a photograph of a large group or a list of people the face or name of someone that is known, however little the person may be liked; the pleasure lies in the sudden recognition. Scenery or country once well known and seen after many years has a direct appeal apart from the memories aroused; one may enjoy going over each feature of a place in which no recollections of past pleasure are involved, and absence from familiar surroundings may amount to positive torture in the case of prolonged and enforced absence from one's native country.

Now it is obvious that symmetrical development is necessary for any growing or moving thing; inanimate objects are subject to the continual pressure of the force of gravity which to a large extent determines their form and arrangement, involving a certain proportion of part to part which may be shortly described as balance, and any want of symmetry, balance, or proportion, being abnormal and strange, would at once strike a note of alarm, obvious and direct to the unreasoning animal dependent for its life upon instant recognition of the unusual; surviving in educated man and his artificial surroundings only perhaps in a vague dislike; though if it occur in the case of some very familiar object—such, for example, as a man with one ear much larger than the other—a considerable feeling of disgust might be aroused.

Thus it is easy to see that there would be a desire for or movement towards suitable environment, and the conditions to which the particular organism was suited, with which it would be in harmonious relationship; colour which was protective to it; suitable food, and so on. As soon as consciousness and the feeling of pleasure was developed, we may fairly assume that such conditions would give rise to a feeling of pleasure which need only be felt at the moment of attainment, since pleasure being a sign that things are as they should be, no further activity would be required until some cause such as hunger, too strong a light, a change of temperature, etc., caused a feeling of discomfort and so an incentive to further activity.

In order to see how this primitive instinctive need in the organism for its proper and suitable environment could give rise to the faculty of appreciating certain objects and sounds with that feeling of pleasure that induces us to call them beautiful, we must, as I have already pointed out, completely disabuse our minds of the idea of abstract and immutable laws of harmony, or composition, or combinations of colours, the idea of the existence of which may often make us wonder why it happens that a flower or a bird comes to be beautiful, or nature so right æsthetically, it must be stated the other way—they are beautiful because they are natural, and our organs that perceive them

have been evolved by one long effort to live in harmony with nature, and we are, therefore, bound to perceive harmony as suitable, pleasing, beautiful. The law of the universe is balance, rhythmical action, and reaction. An organism developing in it, and moulded by its conditions, must necessarily for itself be so formed as to correspond to this law, however concealed. Organisms replying to chemical stimulus so slight as to evade the utmost subtlety of our means of research would be no less sensitive to physical stimulus, if indeed there is any essential difference. The eye would by the force of circumstances be so evolved as to respond to balance and proportion, in colour, line, or movement, the ear to feel the law of balance, or harmony in sound; and thus as satisfactory and pleasing all the parts and organs would feel and respond to the rhythm or periodic law common to all living and moving things; while disharmonies would as such cause discomfort because they would be contrary to all the conditions in which, and to meet which, our organs were evolved; since, as we have already pointed out, the particular form of our organs of perception is due simply to the particular nature of the environment.

It does not, then, seem an unfair assumption to assert that the instinctive pleasure in harmony is directly sprung from the impelling need for suitability to environment, and was of the utmost advantage to the organism, as giving information whether it was in harmony with its immediate surroundings at the earliest possible moment instead of having to prove it by merely living or dying. If now we take this blind craving which we may fairly call an instinct for conformity with nature, or more shortly for harmony, using the word in its widest possible sense, we see it expressed at first in unconscious restlessness under unsuitable conditions, driving the organism to unceasing effort only relaxed if, and when, harmonious adjustment is again attained, when its normal activities can again be freely exercised; we see it in attempts to make or provide suitable surroundings by instinctive activities devoted to modifying or altering the environment in the direction of making it more suitable; then we see it reaching the stage in which mind and intellect come to the assistance in the efforts to gratify instinctive cravings, definitely conceiving the aim for which search and effort is to be made. The desire for conformity with environment will not only impel us to make our surroundings suitable and beautiful—*i.e.*, pleasing—so that all our perceptions may, as far as possible, be harmonious, but the intellectual side will, as always, be developed from the physical, and will also require satisfaction, demanding a life that shall be spiritually and mentally in accord with the meaning of the universe. For perceiving a law and order in the physical world it is natural to conclude by analogy that there must also be an order and meaning in the moral world. The brain can not only conceive ideas based upon felt experiences, but can carry these into an ideal world unhampered by time or space, or refractory material, as, for example, the abstract laws and ideal conditions of mathematics, which are based upon observed physical phenomena. So in art, the mind realising the felt beauty of simple objects and the power of rhythm can combine portions of the external world of colour, form, or sound, in new and novel combinations producing new and far more intense sensations of pleasure, but always guided and limited; in form by the types that have been with us always, and in all directions by the ever-present, felt need for harmony.

Taste the Outcome of Environment.

The suggestion, then, that I have to make is that taste is the direct outcome of the need for adaptation to environment, and that this accounts for our innate liking for harmony, symmetry, balance, etc. It must be obvious that the application of the principle to any particular like or dislike may be beyond even the wildest conjecture, so complicated become the early instincts among all the baffling impulses of modern life.

But it is possible to take one or two simple cases in which we can see the instinctive pleasure in the recognition of the familiar and the useful-forming part, and especially the first feeling of pleasure in looking at certain objects. I may perhaps avoid misunderstanding by again emphasising here that I am referring to the immediate intuition of pleasure in a thing, not to the far more complicated and much deeper and stronger effect of the ideas which are aroused by the object, and which are often so strong as to be considered the only and sole cause.

One of the many reasons which led to the production of decoration is that which has been described as expectancy. The eye feels the want of something to which it has been accustomed. To take an example: a savage with a stone axe has always fastened on the head of the axe with a lashing of hide or tough grass. Now, suppose he discovers a new way of attaching the head that requires no lapping. The axe looks bare and weak, it seems to want something, and he soon meets this want by small marks or cuts; the natural feeling for symmetry, and for identically the same reason, *i.e.*, it is unpleasant otherwise, makes the pattern take on some sort of balance. A great deal of ornament has doubtless originated in this way, and it is as strong to-day. We look for that to which we are accustomed, and so we see the superfluous buttons still adorning our coats, the slit lapel, and so on.

In all kinds of decoration and form there is a sense of congruity and fitness in that to which we are thoroughly accustomed; so that anything very striking or new is apt to be disliked at first sight, though we may afterwards get to find it better and like it more than the other. These sort of examples seem now to be somewhat trivial, but it is not difficult to imagine a stage in which it was vitally necessary to preserve and quickly recognise the normal and familiar.

Simple Curves.

The pleasure felt in simple curves is one of great interest, because we can at times get a feeling of pleasure which is due to the simple sense feeling that is clearly independent of any complication of ideas.

If a circle, a straight line, an ellipse or a curve be presented to the eye successively, it is possible to distinguish a slightly different feeling aroused by each. A curve, such as we describe by the term flowing or graceful, can, we may easily imagine, be followed by a more natural and rhythmical movement of the optic muscles than a straight line or an uneven zigzag. A circle may arouse its specific feeling by the monotonous repetition of similar movements as the eye passes from the centre to various points upon the circumference; it is not generally found attractive, nor is a straight line, unless either is in a position that demands for strength, stability, or fitting action, perfect circularity, or an accurate adjustment, only to be secured by perfectly straight surfaces. In this case they are borrowing some of their attraction from the meaning that we are consciously attaching to them. A straight line is not commonly found in nature, nor is a flat circular surface often met with, so that the eye would not have had the same intimacy of association from early times with such forms.

The Recognition Unconscious.

It is, however, easy to see that though form may be indebted to convenience or suitability for its attractiveness, the actual recognition of this aspect may become so unconscious that the resulting feeling arises directly from the impression as a simple sense response, of which we may, or may not, be able by reflection to trace the cause. We have a distinct feeling of pleasure that is not immediately connected with the idea of utility in looking at a well-shaped object, such as a violin or a beautifully-balanced and designed gun, or anything of the kind that can be handled. The person using any such instrument has as he uses it certain kinæsthetic or muscular sensations which would obviously be more pleasant the more the balance and design of the object made manipulation easy as compared with its weight and size, and so added to its effectiveness. To these sensations also would be due the pleasure in the mere handling of a weapon or instrument, apart from actual use; while in real action they would be probably merged in the more attention-catching purpose for which the thing was being used; but although they might not be consciously noted, they would still leave their impression. When a person has thus acquired numerous experiences of the kind, as indeed no one can help doing, it is easy to understand that as the eye falls upon any similar kind of object the muscular sensations are aroused by the principle of simultaneous association, and with them the feelings that belong to them; these are at once referred back again to the object, which then seems to have a direct appeal to the eye, pleasing or not according to the sensations aroused. The object need not necessarily be one that has been actually used before, as the eye would easily pick out the lines that suggested sensations that had been previously experienced; thus the mere lines themselves would come to have a pleasing appearance quite apart from any connexion. In some such way we may believe that much of the simple sense pleasure in form is due to the stimulation of the tactual and muscular sensations. It is not easy to verify this directly, though it is sometimes possible; in looking at the delicate lines of the Canadian woodman's axe, for example, one can sometimes catch a kind of feeling in the palms of the hand; a bat or a cricket-ball will give a kind of feeling in the arms as though actually using it. This power of appreciation would have had a very distinct value in primitive stages of development in giving a quick eye for the most useful form, and so in a long time a store of unconscious feeling for certain lines be made.

Utility.

I am very fully conscious that the question requires a far fuller statement, but I should be trespassing too much upon your patience if I were to go into it in detail. The point may be summed up shortly—utility ultimately has determined our likes and dislikes, for utility has inevitably settled what forms shall survive just as much in artificial as in natural conditions the useful forms have become the familiar types upon which our idealised conceptions are based. This does not mean that a thing is beautiful because it is useful, or else would Socrates' contention be true that because his protuberant eyes were better adapted for seeing, his large ears for hearing, and his wide mouth for eating, he was therefore really more beautiful than a certain handsome youth? There is, however, this much truth in it, if those forms of features had been necessary for survival and had formed the type of humanity, we should undoubtedly have come to see them with pleasure. The Hottentot probably feels a thrill of admiration for his women, who are to our eyes repulsively ugly. The conscious recognition of the utility of a thing by no means enables us to see it as beautiful, but obvious utility will win tolerance for a thing, while glaring obvious unfitness will spoil anything. The tolerance will pass into a feeling of want if it is not there, and in time, but perhaps a very long time, the thing may become pleasing to look at.

But for a thing to become pleasing the recognition of its utility must have long passed the stage of conscious appreciation.

Skill and Its Results.

Art originated in skill devoted to making the environment more suitable, storing up in

some form the accumulated experience of previous generations in improved conditions and the production of useful objects. Beauty then arose, as far as it was produced artificially, as an incident. We may imagine that skill in its useful and practical attempts at progress occasionally produced some result or incidentally furnished some effect that gave an unexpected delight and pleasure to the beholder, that stimulated his emotion and aroused his feelings. A chance rhythm, some combination of colour or sound, some suggestive effect of form, touched off the obscure feeling, which the mind, unconscious of the source, naturally attributed to the object, and this intuition of value in the object gave rise to the feeling of the beautiful. The particular qualities that stimulated this feeling would be developed, more and more attention paid to them, certain objects would be made rather to appeal to the eye than to be useful, and, finally, the utility would be entirely subordinated, and things would be made only for the pleasure that they gave. It is not difficult, then, to see the further progress of art. Once the effect of rhythm and harmony in arousing the emotions was discovered, with its accompanying feeling of pleasure, opportunities would be sought for its exercise. Anyone who had any idea to impart would find how immensely it gained by being represented in some form which and in itself aroused the emotions of the beholder, and so put him in a receptive mood.

Summary.

It is, I think, quite clear that to whatever source we may attribute the first impulses to art production, a question that has been the subject of much controversy, we are bound to admit that there must have been pre-existent to the first actually produced work of art an innate sense of taste, likes and dislikes to certain arrangements and forms, colours, and sounds that made it possible to appreciate the first tentative efforts and which gave enough pleasure to induce its continuance and development. It is the natural origin of this upon which I have been trying this evening to make some suggestions.

One point I must refer to, and that is to deprecate the idea that there is anything disparaging to the dignity of art in thus suggesting an early physical instinct as the origin of the sense of artistic taste. To those who look upon the beauty we see as a semi-transcendental reality—as part of an ideal and perfect beauty of which glimpses are at times vouchsafed to man, from the hints and suggestions of a partial beauty that he finds upon earth, I can hardly expect such an explanation to appeal.

But when we see how all our higher feelings and emotions are based upon animal instincts that have been raised by the power of the mind of the soul into the ideal regions where the joys and pleasures are those of the imagination and intellect, until it is hard indeed to recognise their lowly origin; when we see religious spirit passing from the animism and fetishism of the savage, the rude anthropomorphism of the early races into the self-sacrificing beauty of the Christian ideal or the disinterested self-annihilation of the Buddhist, we need feel nothing derogatory to art in proposing a similar growth and development.

In conclusion, I may say that I am aware that this paper is full of assertions that have been put, perhaps, too dogmatically, partly from want of space for the requisite argument and partly on the ground that they may serve in this way to stimulate discussion, I am afraid also that I may have been led into a good deal of obscurity in my efforts to avoid being too long."

The Chairman, in inviting discussion, said that Mr. Clay had first of all dealt with the outer life of sense observation and then the inner life of imagination, but in dealing with the question of taste he had rather excluded it from his view, and had more particularly dealt with that instinct which underlay the sense of taste. He had dealt with the subject in a most able and scientific way, but no doubt they would be able to debate it on more general and artistic lines. He would call upon Mr. David Murray, whom they had with them for the first time, to open the discussion.

Mr. David Murray, R.A., said that all of them who were employed in or connected with the fine arts must have realised that they had neglected, in their haste to acquire some degree of taste in their professions, to consider the origin of taste, and the present was a good opportunity to correct that forgetfulness. In their professions taste was a thing that was more deficient than they were quite aware of, and he often felt that one exercised prejudice rather than taste. We found the sculptor, the architect, and the painter all deficient but they would be annoyed if anybody charged them with a want of taste; still their taste was very partial. In each of these professions men had standards of their own, and all that belonged to a standard of a particular man was taste, and all that differed from it was lack of taste. There might be, for instance, a certain style of architecture that a man would assert to be the ideal, and to him all other styles were more or less inferior, and some utterly worthless. In painting there were certain manners of the expression which might belong to the pre-Raphaelite, and certain other qualities to the art of the Impressionist. Good in each and also bad in each. Developed taste enabled its possessor to recognise and appreciate the best in each. Taste was not associated only with a particular choice or line in art. He felt that taste did not exist entirely in ourselves, and he thought there must be a standard of beauty that must be a standard of taste, because whether we as individuals differed from it the world had acknowledged that certain things—and they were innumerable—were beautiful. Our whim or our prejudice might rob us of the power to discriminate, but that beauty existed, and taste as that which recognised this beauty, and if we failed to recognise this beauty our taste must be very partially developed. He would not be led on into saying more in a direction which he was not prepared to go, but he would propose a very hearty vote of thanks for a most able and interesting paper.

Mr. John W. Simpson, in seconding the vote of thanks, said he should like to compliment the Council upon their courage in admitting such a paper. It was a distinct departure, though he might say that the list of papers for the different sessions of the Association had always shown, so he thought, a most interesting selection, and of the kind that most architects must desire. He did not agree with Mr. Clay that the paper was of no practical value. A paper of the kind—an excursion into the realm of philosophical analysis—was of great use to men who were being trained in any scientific form of art such as architecture, though it might not be as a subject for the Royal Institute of British Architects' examination. The exact expression of thought and the compressing and directing one's thoughts in a definite direction afforded one of the finest tests of mental training which could be offered to anybody. The working out of a speculative essay of this kind was a most excellent exercise in the practice of thinking exactly and expressing one's views concisely and clearly, and if they wanted a practical application of that they should think of what they had to do in writing a specification; that was exactly the kind of thought required, and it was not easy to acquire it. In considering the main question there was a tendency to enter upon a dissertation of the different forms of beauty and discussion of the different forms of taste instead of the origin of taste, and it was difficult to speak within those narrow lines which Mr. Clay had set. It was healthy to go back to primary causes and to satisfy ourselves as to the basis of our beliefs, and so in the matter of art. The theory of evolution could be compressed into this—that pain and pleasure were really the mainsprings of all movement in life and therefore of art, and that without them there was inertia. When we came to over-stimulate either of these sensations of pain or pleasure we came perilously near to decadence and, in the case of pleasure, perhaps, to vice, Mr. Clay had spoken about the instinctive sense—of instinctive likes and dislikes—and though at first sight there might be a tendency to challenge that, he believed that Mr. Clay had stated the matter perfectly correctly. The sense of beauty was instinctive—hereditary, if they liked—but quite independent of actual training. There was really some truth in the traditional Philistine's remark, "I don't know why, but I know *what* I like." He would give them an extract from Lecky's "Natural History of Morals," which would afford valuable testimony as to the correctness of Mr. Clay's views. Lecky said:—

"Our æsthetical judgment is of the nature of a preference. It leads us to prefer one class of objects to another, and whenever other things are equal, becomes a ground for action. In choosing the persons with whom we live, the neighbourhood we inhabit, the objects that surround us, we prefer that which is beautiful to that which is the reverse, and in every case in which a choice between beauty and deformity is in question, and no counteracting motive intervenes, we choose the former and avoid the latter."

In the same treatise the author said:—

"Corresponding propositions may be maintained with perfect truth concerning our sense of beauty. In proportion to its strength does it guide our course in ordinary life and determine our peculiar pursuits. We may indeed sacrifice our sense of material beauty to considerations of utility with much more alacrity than our sense of moral beauty; we may consent to build a shapeless house sooner than to commit a dishonourable action, but we cannot voluntarily choose that which is simply deformed, rather than that which is beautiful, without a certain feeling of pain, and a pain of this kind, according to the school of Hartley, is the precise definition of conscience. Nor is it at all difficult to conceive men with a sense of beauty so strong that they would die rather than outrage it."

The next point he had noticed in the paper was as to subconscious recognition, and that was a matter that must have struck all of them at one time or another—the pleasure of recognition and the absolute necessity there was for familiar form in a composition to be presented to us before we could recognise departure from it. In considering any composition, whether it was a picture or a piece of sculpture or architecture, it was necessary that there should be a certain repetition of known form before one could appreciate and value a departure from it, and that was why, if they could imagine such a thing as a building which consisted of an entirely new form, that building would be an incomprehensible chaos, such as the student may find in *art nouveau*. Mr. Clay very properly said: "A beauty not perceived is a pleasure not felt." He would add, the eye untaught does not actually see. We only see that we know. Beauty was in the eye of the beholder in a very real sense, and that was a very valuable hint. A student drawing from the model saw practically only what was pointed out to him. As to Grant Allen's theory as to the connexion between colour and sound, he would remind them that some ten or twelve years ago Mr. Wallace Rimmington, the painter, invited a number of people to St. James's Hall to see an invention of his called a colour organ. It was the adaptation to the ordinary form of musical organ of a coloured screen on which different colours were displayed by aid of a magic lantern, it was to be presumed, and the colour scale was assimilated and corresponded to the musical octave. The result was extraordinarily interesting, and he remembered the Overture to "Rienzi" being played. It opened with a long trumpet note on E and the moment that note was heard a tremendous blaze of bright orange was produced on the screen. It was very fine, and it corresponded, perhaps, to the perception of the trumpet note. As to the evolution

theory generally, the evolution of the artistic sense in connexion with its surroundings had been accepted by the higher school of thought in Europe for some time, but the way Mr. Clay had put it appeared to be quite new. In geology Lyell had given the history of the earth's crust from the evolutionary point of view; in biology Darwin and Huxley had dealt with the history of life on this planet; and Herbert Spencer applied its principles to practically every branch of knowledge. J. A. Symonds was extremely interesting in his speculative essays on the question of anthropology considered from the point of view of evolution, and that carried with it morality, psychology, history, and pretty well everything else. Galton, and Frazer in "The Golden Bough," had shown very clearly the connexion of evolution with the advance of man from a savage state. There was an evolution of the artistic sense by improved surroundings. As Lecky said: "A steady modification of tastes, while a recognition of the broad features of beauty remains unchanged, accompanies advancing civilisation." The uninstructed peoples prefer gaudy to subdued tints, violent attitudes, strong emotions, a florid to a severe style. As the same author said: "There are few better measures of the civilisation of a people than the conceptions of beauty it forms—the type or ideal it endeavours to realise." The recurrent period that we find in art and advancing type or succeeding series (not rise and decline) suggested the analogy of organic growth. By involution, guided by science, we found amœba in a comfortable slime. What was extremely suggestive of organic development was that while some phases developed and came to their climax, others fell or changed into another phase, and so on. There was a passage in the lecture which made him look up his Ruskin, and that was as to the pleasure of recognition and what Mr. Clay said as to scenery or country once well known and seen after many years having a direct appeal apart from the memories around. Ruskin, in his Inaugural Lectures on Art at Oxford, said:—

> "Also, the faculties which are thus received are hereditary; so that the child of an educated race has an innate instinct for beauty, derived from arts practised hundreds of years before its birth. Now farther note this, one of the loveliest things in human nature. In the children of noble races, trained by surrounding art, and at the same time in the practice of great deeds, there is an intense delight in the landscape of their country as memorial; a sense not taught to them, nor teachable to any others, but, in them, innate; and the seal and reward of persistence in great national life; the obedience and the peace of ages having extended gradually the glory of the revered ancestors also to the ancestral land; until the Motherhood of the dust, the mystery of the Demeter, from whose bosom we came, and to whose bosom we return, surrounds and inspires, everywhere, the local awe of field and fountain; the sacredness of landmark that none may remove, and of wave that none may pollute; while records of proud days and of dear persons make every rock monumental with ghostly inscription, and every path lovely with noble desolateness."

That was a very fine passage, and upon it we might note that a curious corollary seemed to hang, and that was that our very want of high artistic development might tend to make us good colonists. The Englishman went abroad to a foreign country and prospered, while the more sensitive Latin suffered horribly from nostalgia and returned to his native country. That there were sound physiological reasons for the finest kind of art, apart altogether from questions of taste, he had long believed. The coloured rays of light have long been known to have distinct influence upon certain forms of life, and the smallpox hospitals nowadays always had some wards with red windows. That had a very definite effect on the disease of smallpox; and it seemed to him probable that the analogy might hold, that irritation of the senses by unpleasant forms had after a time a deleterious effect in other directions. He should like to sum up the paper more or less in the form of a moral. The development of taste was more or less hereditary, and therefore it was of vital importance to keep good forms of art always before our eyes. The tolerance of the ugly, to which we were in a great measure obliged, was not only demoralising to ourselves, but an actual artistic injury to the race. When we had considered all these things and found them extremely interesting, still

> "Though all this be thus,
> Be those men praised of us
> Who have loved and wrought, and sorrowed, and not sinned
> For fame, or fear of gold,
> Nor waxed in winter cold,
> Nor changed, for changes of the worldly wind;—
> Praised above men be these,
> Till this one world and work we know shall cease."

Mr. W. H. Seth Smith said he should like to associate himself with what had been said. When he first saw the paper he doubted a little as to the utility or value of the subject, but as it happened they had had a highly intellectual treat, and he now felt that the paper had a decidedly practical value, and was not at all futile. The subject was abstruse and the complications involved in the art of poetry and music were insuperable, and it would help them if they narrowed the argument down to their own craft. Primitive man was compelled to adapt himself to his environment, and though utility was the basis of the forms of his implements and his dwelling, he was equally in harmony with nature when he scratched an outline of a stag on his bone or wood instrument or plaited the covering of his wigwam. The simple pleasure derived led him to develop his art instinct, and, so long as he followed his intuitions, progress was sure towards the evolution of the higher emotions differentiating man from brute nature. This higher emotion was known as imagination, and to it is due not only the delight we experience in tracing beauty of moral character in the expression of a face naturally plain, but in its turn it has inspired the invention of the arch, the vault, the dome, the spaciousness of our art, in short the grander manner to which our attention was just now being called. Utility took a back seat when imagination led, but Mr. Clay's paper could not be described as unpractical if we learnt from it that utility must still be the foundation, although the higher emotions constitute architecture as differentiated from building. More than this, that in all *useful* arts our natural pleasure was dependent on the combination of the primitive origin of design and its ultimate quality of imagination. Hence the sanity of our insistence on the co-ordination of painting and sculpture with our own art, as these more imaginative arts unify and enhance the whole scheme. The problem they were asked to ruminate upon when they left that meeting was whether these nobler qualities of art entitle us to ignore truth in construction for the sake of ideal form. This question was not so easily dismissed as Mr. Ruskin imagined, since man was the only creature who soars so high as apparently to be able successfully to defy some of nature's laws, but the lecturer, by indicating the underlying law of utility as a condition of harmony with nature, teaches us that we risk the loss of lofty pleasure by following false ideals, and if nature was the stronger our false art would not live. The paper, moreover, explained why birds' nests and simple old village cottages—as well as the Parthenon and Westminster Abbey—are beautiful, and sometimes even the unstudied backs of our own productions are beautiful; why some recent commercial street frontages in London may be predicted to be admired when more ideal and conventional art compositions for quadrants are condemned; why the scholastic study of architecture should not be confined to building construction; why architectural archæology is generally pernicious to the student; and why all artists insist on the study of nature, and especially of the human figure.

Mr. C. Wontner Smith then read the following communication, received from Mr. Arthur Bolton:—

"I have read the paper with some interest, as it appears to suggest a solution of a question that has always troubled my rare visits to the Zoo, and that is, assuming nature to be beautiful, must we accept the hippopotamus as a type of beauty? If I follow Mr. Clay rightly, his answer is unhesitatingly yes, because the animal has grown so, like Topsy, and if we admire it with reluctance, it is sheer ignorance on our part. I congratulate Mr. Clay on his courage, and if he carries his ideas into the world of work, it becomes apparent that the engineer is the real artist and machinery the true source of study. Clearly there is something wrong, and consequently I imagine that the author will have to limit his theory to the mere origins of things, so that in the world as we see it we can safely disregard nature, reverting to the Whistlerian doctrine that "Nature is usually wrong," that is to say, that the developed taste of mankind is to be the main, if not the sole, guide, failing which we shall be worshippers of strange cattle. Mr. Clay deals with a very abstruse matter. I well remember a discussion of this sort being terminated by an old artist in Spain with a quotation from Byron:—

> "English beauties ripe and real
> Better far than the Ideal."

which is perhaps less familiar than Keats's lines on truth and beauty. It is the insoluble nature of the problem that reasonably accounts for the reluctance of artists to express any opinion beyond a mere personal assertion of a point of view, which naturally does not go very far. Mr. Clay does not, I trust, intend to confirm in his obstinacy the hopeless person who "knows what he likes." We shall have a bad time if he makes the public his disciples."

Mr. J. D. Crace, in supporting the vote of thanks, said he agreed that such a paper had a very great value, if for no other reason than that it made people think. Mr. Clay had shown that from the beginning of things the one important end of what in this case happened to be expressed as taste was fitness. Now fitness was the one thing which he believed was at the bottom of all good architecture, and fitness in structure as well as in aspect. Mr. Clay had laid stress on the difference between original taste as against formed taste. Immediate recognition of what was beautiful and fit in a building was of the greatest value; and probably, of all the qualities which went to the immediate recognition of a fine work, the idea of its first object of stability was the most important, and the impression of suitability; and that could be got only where the forms which expressed structure were not interfered with by ornamental features, or those which were of secondary importance. It mattered not what was the style, or what the character of the building; but the immediate recognition of suitability and fitness of a thing were essential to its absolute merit. Taste in relation to the modern sense of choice rather than taste had been touched upon, and the common view was expressed in the saying that "orthodoxy is my doxy, and heterodoxy is other people's doxy." We could never be all agreed on matters of taste, but that was not what Mr. Clay had been dealing with. The lecturer's object was to put before them the idea that what made for taste, or preference, was fitness to surroundings, and that was most valuable. As a side issue he would allude to the growth of taste for particular forms of beauty. In reading books of, say, two hundred years ago they would find that mountain scenery was regarded with horror. In John Evelyn's Diary, or in any book of the life of the time, it would be seen that a mountain was a thing to be dreaded and avoided, and the praise which poets and essayists bestowed on nature always related to pastoral scenery, for that was what appealed to them. Now that we could travel safely on railways mountain scenery had quite a charm, and that was an illustration of the development of taste. Reference had been made to Grant Allen and the analogy of music and colour, but before Grant Allen was born

several other men dealt with the subject: Field's "Chromatics" were founded on that analogy, and that work was published in the first quarter of the last century; and Hay and other men about that time dealt with the subject. The question was a very interesting one, but the two things could never be quite assimilated. There was no doubt that the sense of beauty, as cultivation proceeds, was a question of environment, and he agreed that it was a great injustice to our own time to allow ourselves to get accustomed to ugly things. The man who was always handling the pickaxe and the spade found himself incapable of appreciating anything which required nicety of touch; and so it was with the eye. If we were constantly surrounded with what was ugly, we lost, to a great extent, the power of discrimination.

Mr. H. P. G. Maule said if they could have a few of these abstract papers, which made them think, it would be a good thing. There were one or two things which it was necessary to keep apart. The original sense of taste had to a great extent been overlaid by the intellectual sense of taste, and it seemed extremely difficult to consider the first unless they neglected the intellectual sense, which had come about as the result of the accepted and formed opinion of the ages. For instance, they were all agreed about Greek work. The Parthenon was accepted as a beautiful building, and that had nothing to do with the origin of taste. There were the two things: the original instintive sense of taste and the overlaid sense of taste, and we were all the time doing our best to bring about an intellectual sense of taste, as against an instinctive sense, by means of our school and our architectural and other education. Mr. Clay had referred to weapons, and it had often struck him (the speaker) that the sense of taste in the savage was largely the result of his use of weapons. The better and more suitable his weapons, the better the savage could defend himself or overcome his enemies; and one had only to look at the gradual change from the paleolithic weapons to the neolithic to see that the arrow heads were beautifully formed—there were balance and rhythm in them; they were some of the first works of art; and, if so, then the sense of taste was largely influenced by the form of weapons. Mr. Bolton seemed to overlook the point: He talked about the hippopotamus, but so far as that animal was suited to his environment he was beautiful. The same could be said of the crocodile, the object of which was to look like a log in the water. Mr. Clay said that the conscious recognition of the utility of a thing by no means enabled them to see if it was beautiful. Suppose they were dealing with a municipal building, and they had a most perfect plan and a barrack-like exterior, etc., that would not be a fit building. Though the plan might be fit, the building would not be so, and therefore it would not be beautiful. They would be able to apply that at the present time. Fitness in a building meant a structure that expressed its purpose internally and externally, and therefore its beauty depended on its fitness being general.

The Chairman, in putting the vote of thanks, remarked that there were so many direction posts to-day that it was difficult to think for oneself. In the Association the students' first study was necessarily directed to the old examples, but as early as possible they were brought in touch with the design of buildings of modern practical requirement. Mr. Murray had referred to the slovenliness of impressionist work in terms that might equally apply to architecture, and had suggested that there existed a standard of excellence which properly developed taste would recognise. Mr. Bolton evidently disapproved of the man who "Knew what he liked," but R. L. Stevenson had said, "To know what you prefer instead of saying Amen to what the world thinks you ought to prefer is to have kept your soul alive." As regards the public attitude to-day, it was difficult to say how much of the public taste was due to instinct and heredity, but it was impossible to set aside the educational influence of surroundings by which the sense of taste was undoubtedly developed.

The vote of thanks was then very heartily agreed to.

Mr. Clay, in reply, said that Mr. Murray stopped just where he was getting really interesting. The point he would have liked to hear about was as to the universality of beauty, *i.e.*, an external standard of beauty to which the various kinds of efforts which we make are tending. Personally, he did not believe in any absolute standard of beauty, and he should have liked to hear something about it. It was obvious that as the generality of people had the same environment and the same training their general tastes would be much the same. Just the same with food. There were common likes in foods, like bread, but many other things some people liked and some did not. There were general tastes, and likes and dislikes; and those likes gradually got cultivated and developed, and so formed a standard for those people. As to colour and sound, Grant Allen's book was not about the connexion between colour and sound, but between colour and sound and rhythm and the organs which perceive. That was to say, there was a direct physical structural connexion between the vibrations of sound and colours and the organs of perception. Some years ago there was an exhibition of the curious phenomena of the relation between colour and sound—the drawing, for instance, of a violin bow over the edge of a glass containing coloured liquid, and the resulting formation of patterns, and so on. The various feelings and emotions had a great deal in common, and one would excite another, and so a kind of connexion in feeling was got. The rapid vibration of a high note had a sort of analogy to the rapid vibrations of one of the brighter colours, the common ground being an emotional one. He should like to emphasise the value of having good models—the formation of a standard of taste by unconsciously living with things that were good. It was the unconscious part of it which was of real value.

Mr. Murray: In saying "good models," don't you acknowledge a standard there?

Mr. Clay: Yes, but a standard as meaning that which long-standing experience has shown to be good models, not as part of some external absolute beauty. These were days of artificial things. Boys and girls were surrounded by things which, good or bad, were artificial, and they were unconsciously influenced, and that influence grew up with them. If they read good literature they had no desire for the bad. Mr. Bolton's remarks about the hippopotamus seemed to show that he had not read the paper very closely. He (the speaker) did not say that because a thing was useful that therefore it was beautiful; and he gave the case of Socrates as an example. If Mr. Bolton or anyone else thought the hippopotamus beautiful, then it would be beautiful so far; but, as was insisted upon in the paper, a thing was only beautiful if, and when, it aroused the feeling of admiration; if this failed no one could call it beautiful, though it was well adapted to its surroundings. As to the "hopeless" person who knew what he liked, he wished there were more people who honestly said what they liked, for then we should in time have a great improvement in art generally. People did not say what they liked or disliked, but what they thought they ought to like or dislike. The difference between the instinctive and the intellectual sense was what he had tried to get at, but he could not go into it at length. The instinctive sense grew up naturally, and it was unconsciously formed; and training during early years formed a standard of taste, that had probably been going on for a long time, and derived from it we got an intellectual taste. In seeing a beautiful thing for the first time, one had the impression of the object and an agreeable feeling, and they came together in such a way as to make a simple feeling of beauty. As to weapons, they provided a great opportunity for advance in art. A beautiful rapier, designed only to facilitate the purpose for which it was used, would not excite the idea of the purpose, but it would now cause pleasure by the beauty of its lines.

The Chairman announced that the next meeting would be held on November 20, when Mr. J. B. Fulton would read a paper on "The Church of Santa Sophia."

The meeting then terminated.

THE NORTHERN ELEMENT IN GREEK ARCHITECTURE AND SCULPTURE.

AT a meeting of the Society for the Promotion of Hellenic Studies, held at Burlington House on Tuesday, Professor W. Ridgeway lectured on the above subject, and said the point which he was desirous of placing before them that night fell under four heads. Firstly, all writers up to the present when speaking of Homer and Homeric dwellings spoke of the "Homeric House." He wanted to show that there was no such thing as a Homeric house, but that there were two main types. Secondly, he wished to show that one of these types was the high-pitched roof, *i.e.*, that later on when temples began to have roofs put upon them they got this high-pitched roof, which was the parent, so to say, of the pediment—one of the chief features of Greek architecture; and that that element came from the North. Further, when the time came for the decoration of this form of temple, the frieze and pedimental sculptures were the result of the form of decoration which came from the North with certain northern invaders, and were not derived from Asia Minor, as was commonly assumed by all writers on this subject. Dealing first with the question of the Homeric House, Professor Ridgeway quoted from the "Iliad," showing that the house built for Achilles had a sloping roof, and said that the famous simile of the wrestlers in the same poem, leaning against each other, would lose its point if the house had not had a roof of this kind. Again, with regard to the house of Ulysses in the "Odyssey," the lecturer controverted the suggestion that it had any resemblance to the Palace of Tiryns, and criticised the ground plan put forward by Professor J. C. Myers, particularly with regard to the situation of the apartment of Penelope. Various incidents described in the poem pointed to the fact that the roof must have been pointed, and an especially strong argument was the hanging of the guilty handmaidens from the roof. They knew that the long-shaped, pointed roof was developed in German lands by the placing of a kind of curtain over a great branch of a tree, whilst the great tree itself made a part of the house. They knew that the palaces at Tiryns and Mycenæ had flat roofs, and down to 600 B.C. flat-roofed temples were known; but they did not depend alone on archæology for that, for in Pindar there was a passage which put beyond all doubt that in the Vth century a gable roof had only been fixed on to a temple at a late period. Thus there was both monumental evidence as regarded shrines and the evidence of Pindar that in olden days the Greek temple had only a flat roof like the flat roofs of the great Hellenists of the Bronze Age, and it seemed not improbable that some architect placed on the old flat-roof temple a sloping roof. That this sloping roof came with the people of the North he had little doubt, and his argument was strengthened by the fact that in historical times in Greece there was a town where they had sloping roofs quite different from the ordinary flat roofs in use in Greece, and the people of that town came from the North. One of the chief features of the decoration of the classical

temple was the sculpture of its pediment and frieze. In this decoration of the running frieze, broken up with figures and animals, they had a type of decoration which hitherto had been said to have come to Greece from the East. The typical form of grouping figures in the Bronze Age was to have two beasts, one on each side of some central object, and that they found in early Babylonian work. Professor Ridgeway proceeded to show slides of a decorated Mycean vase, which was totally different from the type of decoration of the heraldic figures, and said that although it was supposed to be Oriental, yet it was a type of decoration known in Upper Europe years before and was found on bronze axes. It might well be asked why it was that Greek archæologists assume that the friezes of the Greek buildings came in from the East, but the fact was that when the Layard sculptures came from Nineveh everyone was filled with the notion of the Garden of Eden being the centre of everything. They then made that assumption, and it had gone on ever since, but when they came to face the matter none of these Assyrian reliefs were older than 900 B.C., whereas the Ionians had showed themselves in Asia Minor 1100 B.C., and had brought with them the remains of Mycenean art. In other words, the continuous frieze was an established thing. In the geometric pottery of Athens and Corinth they had the principal architectural phases appearing. Everyone was agreed that the connexion between these vases and architecture was very close, and it was generally held that the vases had been copied from the architecture. The best authorities all held that there was a very strong connexion between this type of Athenian pottery and the corresponding Corinthian forms which had been derived from the well-known bronze geometric work of Bœotia. Hence it had been admitted that, in the pottery of Athens and Corinth which showed these forms of decoration which they recognised as corresponding to the frieze and metopes, they had influence received from Bœotia. Who were these Bœotians who made this pottery? Thucydides said they were an Æolian people from Thessaly, who found there a people when they entered the country about 1124 B.C., and the inhabitants found were the Achaians of Homer. They had, therefore, in Bœotia this bronze work with geometric ornament produced by these people from the further North, which was so bound up with the frieze and metope and pedimental sculptures of architecture. His contention was that they found in the fully-developed classical sculpture two great traditions brought by the barbarians of the North. They had the pediment which was the outcome of the application of the sloping or gable roof of the North, such as those which were brought by Achilles and the Achaians into Greece. That was the parent of the pediment, one of the chief glories of the Greek temple. Secondly, the principle of the running frieze had also been derived from the North, and passed through the region of Bœotia into the sculptured decorations of Athens and other parts of Greece. In the early pediment, as in Ægina, a characteristic was that there was no centralising movement, but when they came to the time of Phidias the story was different; then they began to find the central movement. It was the old race who were the artists at all times, and when at the great renaissance people like Polycletus and Phidias came to the front it was the old race working upward. It was the old people coming to the surface, and with them they found the old principles working out. It was the swing back to the heraldic movement—the old principle of the Bronze Age decoration. And then they must not be surprised that the northern barbarians could produce this influence. Let them think of the great Gothic architecture. It was simply the result of the Germanic people passing through a region bringing with them their own principles of wooden building. They came as conquerors of the skilled craftsmen of the Latin races, and just as Phidias himself declared that he got his inspiration from the forms of Homer, so when the time came the Latin handicraftsmen were inspired by the higher principles and loftier ideas and grander conceptions of their conquerors, and thus gave the finest outcome of the architectural skill of the human race—Gothic architecture.

On the motion of Mr. Macmillan, seconded by Sir H. Howorth, a vote of thanks was passed to Professor Ridgeway.

EGYPT EXPLORATION FUND.

MR. F. G. HILTON-PRICE (President) took the chair at the twenty-second ordinary general meeting of this Fund, held at the rooms of the Royal Society, Burlington House, on Tuesday.

Following the usual formal business of the election of committee and other officers, the Hon. Treasurer (Mr. H. A. Grueber) gave his annual financial statement, which stated that the total receipts from all sources were 1,345*l.* 15s. 1d. The net results of expenditure and receipts showed that they carried over a balance of 741*l.* 17s. 2d., which enabled them to wipe out all their excess of expenditure of previous years and would provide the greater part of the coming outlay in the excavations during next season at Abydos. The general balance-sheet showed total assets of the Fund and its branches of 3,764*l.* 9s. 4d., apportioned as follows:—Egypt Exploration Fund, 2,417*l.* 0s. 10d.; Archæological Survey, 697*l.* 8s. 9d.; Græco-Roman Branch, 599*l.* 19s. 9d.; and the Students' Fund, 50*l.* With regard to the coming session, they had received from the *Service des Antiquités* at Cairo a concession to excavate at Abydos a spot which had already been the scene of their labours under the guidance of Professor Petrie. The extent of the site at Abydos was very great, so that they would work on entirely new ground. The expedition would be under the superintendence of Professor Naville, who would have the assistance of Mr. E. R. Ayrton. Dr. Grenfell and Dr. Hunt would have proceeded to the Fayûm in search of more papyri on behalf of the Græco-Roman Branch, but as Dr. Grenfell's health had broken down, the expedition might have to be abandoned for the present.

The President in the course of his address referred at considerable length to the loss sustained by the Fund by the death of Sir John Evans, who had been its President for seven years. Other supporters who had passed away were Judge Baylis, Mr. Louis Dyer, Admiral Maclear, Mr. W. S. Young, Sir H. S. Colvile, Sir John Corry, and Miss Rücker. Last year he gave them the reason for not undertaking an expedition for 1907-8, but they would have gathered that they had now a surplus and proposed undertaking an important excavation at Abydos in the season 1908-9. As the Fund had no expedition to Egypt last season, he had only, according to custom, to give an epitome of what had been accomplished by other workers in the field. Professor Flinders Petrie carried on excavations at Athribis and Memphis. A group of tombs of the pyramid age was discovered, cut in the rock cliffs above 500 ft. high. Professor Petrie described a Ptolemaic temple, built in the time of Auletés, continued under Claudius, and finished under Hadrian. The plan was unlike that of any temple hitherto recorded. The cellar was enlarged from the Egyptian type, the surrounding chambers opened outwards, and the whole was encompassed by a peristyle colonnade. An outer girdle wall enclosing and hiding the temple was purely an Egyptian feature. Only a part of the temple was examined. Another temple site was discovered of two or three generations earlier, under Ptolemy Physkon, but it had been so much destroyed that only part of the pylon was left. Near this was a remarkable tomb of the Roman age which had a painted ceiling with two zodiacs that were coloured. The *magnum opus* of Professor Petrie was the commencement of operations on the immense site of Memphis, upon which over three months of the season were spent. The whole of the great temenos of Ptah was traced out, and the possibility of understanding the account given by Herodotus was settled. This sacred enclosure of the creator god of Memphis was a third of a mile long and a quarter of a mile wide; in fact, as large as the great temple of Karnak.

With regard to the temple of Merenptah and the foreign quarter, much Greek pottery was found strewn over this area. A great lintel of a gateway of Merenptah had been recently found *in situ*. An area behind this has been cleared, down to 2 ft. under water. This seemed to be the temple of Proteus described by Herodotus. The Græco-Egyptians who lived here in the Vth century B.C. appear to have had a fashion of modelling terra-cotta heads, representing the various foreign races who were known in the traders' quarter. Professor Petrie had identified them as the Persian King, Sumarians of Babylonia, Indians, Semitic Syrian, Scythian cavalry, archaic and classical Greek types. A building of King Si-amen was found, in which seven large lintels carved with figures and inscriptions, and some door-jambs, were discovered and removed. Hitherto no slabs of this king existed in any museum. About a quarter of a mile away, inside of the courtyard of the British school, a column, 13 ft. high, standing on its base underground, showing that another large building of Si-amen underlies the premises.

Mr. Weigall found the remains of a Ptolemaic or Roman temple at Kossair. In August he cleared the tomb of Rames at Thebes (*temp.* Amenophis III. and IV.), which yielded some beautiful reliefs, the finest perhaps in the necropolis. The expedition sent out by the Metropolitan Museum of Art, New York, continued its work on the pyramid field of Lisht. The digging was mostly on the pyramid of Amenemhat I. A good deal was now cleared. The pyramid and its temple were in a terrible state of preservation, it having been used as a quarry for generations. Many interesting objects appeared to have been found. Built over the temple and up the slopes of the ruined pyramid there was a flourishing village, which could not be dated earlier than the XXIInd Dynasty. Mr. Quibell reported that excavations at Saqqara were carried on in four different places of the site, viz. (1) in the monastery of St. Jeremias, (2) in the temple of the Teta pyramid, (3) on the east side of the step pyramid, and (4) along the range of mastabas north of the enclosure wall of the same pyramid. On the XIXth Dynasty level of the temple of Teta a perfect draught-board with its eleven pieces and two knucklebones, neatly packed into a drawer, was discovered. Mr. E. R. Ayrton, working with Mr. Davis in the Bibân el Molûk at Thebes early in last season, discovered whilst digging in the already opened tomb of Rameses VI., at a considerable depth, a deep shaft from which a single chamber opened out which was full of rubbish, amongst which they found pottery, alabaster vases inscribed with the names of Rameses II., and a small heap of jewellery. They afterwards discovered the tomb of Horemheb, the last king of the XVIIIth Dynasty, which had been completely plundered in the past, but contained beautifully-coloured reliefs and much broken furniture, etc. Professor John Garstang, of the University of Liverpool, resumed his excavations in XIIth and XIIIth Dynasty tombs at Abydos, where he was fairly successful in obtaining an interesting collection of typical antiquities. Mr. Edgar said that at Tell Timai, in the Delta, he made a nice find of a quantity of marble heads and limbs of the finest Greek workmanship. A hoard of gold Ptolemaic coins was found at Samanoud, and some jewellery and small objects at Tell

Tebilleh, an ancient cemetery near Dekernes. The Deutsche Orient-Gesellschaft continued their work of exploration at Abusir, in the Temple of Sahure, where they found interesting sculptures, palm-columns, papyrus columns, and plain columns; sculptures relating to a war in Libya, another to an Asiatic expedition, and a quantity of ordinary tomb-scenes.

Dr. Hunt also addressed the meeting on the forthcoming further volume of the Oxyrhynchus Papyri, the chief items in which would be the lost Hypsipyle of Euripides and some extensive portions of and commentary upon the Second Book of Thucydides, the author of which is unknown.

THE BRITISH SCHOOL AT ATHENS AND ROME AND THE BYZANTINE RESEARCH AND PUBLICATION FUND.

SIR,—In the able address of the President of the Royal Institute of British Architects, published in your last issue, I am glad to notice that attention was directed to the fine series of drawings by M. Hulot recently exhibited in London, and, following on this, a suggestion thrown out as to the desirability of having some place of gathering equivalent to the Villa Medici at Rome, for our own travelling students abroad. I am also pleased to see that you drew attention, in your Note on the Institute meeting in the same issue, to the fact that there already exists a British School at Rome which has done good work in the way of architectural study and record.*

It seems to me that architects would be well advised in assisting existing bodies that throw out the helping hand to young architectural students, rather than in attempting to establish anything approximating to French methods, which, while admirably suited to French conditions and temperament, are impossible of adequate realisation in this country, where so comparatively little help is given by the State, and where things consequently have to be attempted on much more modest lines and to be supported more by individual effort.

It really seems to be very little known amongst the general body of architects that there has existed for over twenty years in Athens a British Archæological School, the benefits of which are open to architectural students. In fact, travelling students of the Royal Academy and the Royal Institute have a special right of nomination to membership on giving some quite simple undertaking as to length of residence and on agreeing to do some definite piece of work, the nature of which is largely left to themselves, provided it is a *bonâ-fide* piece of architectural study. The first Director of this School was Mr. F. C. Penrose, the last of the old great group of classical architect-scholars, which included such men as Robert Adam and Cockerell.

The British School at Rome is of more recent origin, but it was established on similar lines to the School at Athens, and works as far as may be in collaboration with it. Good research work has been done by architectural students attached to these Schools, but a great deal of it is hidden away in portfolios and notebooks, and has never been published owing to want of funds.

At Athens there is a large and valuable library accessible to students, and a hostel where students can reside at quite moderate cost. At Rome there is a good library, and at both Schools every help and facility is given to students in connexion with their studies, and meetings are held periodically where papers are read and discussed, drawings exhibited, and friendly converse takes place between students of different nationalities.

While every season fresh sites are being examined, the remains of the past are also being in many cases obliterated or defaced, either wantonly or through ignorance, especially in remote spots; and with a view to making a serious effort to adequately study the still unrecorded remains of Byzantine architecture in the East, some six months ago a Special Fund was initiated, called the "Byzantine Research and Publication Fund." This fund is managed by a committee which numbers amongst its members the heads of both the Greek and Mediæval Departments of the British Museum, the new Director of the South Kensington Museum, the Directors of the British Schools at Athens and Rome, and several architects who have made a particular study of this important period.

The study of Byzantine architecture should appeal to a large circle of architects on account of its importance both constructionally and decoratively, and as affording a basis for tuition to students, not with a view to slavish imitation, but rather as an example in the reasonable use of ordinary materials to hand and in the overcoming of great structural problems. One of the aims of the Committee of this fund is to advise young architects having studentships and who show a particular bent to study in this direction, by pointing out to them the best examples to turn their attention to, by, where possible, supplementing their pensions, and thus enabling them to have longer time abroad than they otherwise would have (on condition that they do definite pieces of Byzantine study); and by afterwards arranging for the publication of the results of their study. Although the fund has only been in existence barely six months it has already done good work. Mr. W. Harvey, the Royal Academy Travelling Student, applied to it for advice, and the Committee has been the means of helping towards his doing some valuable pieces of genuine architectural study, as will be seen when the works of this student are on view later on. Mr. Harvey is further going to continue, under the auspices of the fund, his study of the subject by going to Jerusalem and making full records of the most important works of Justinian there and at Bethlehem. The Committee of the fund is now asking for subscriptions towards having this work made as complete and valuable as possible and towards its eventual publication.

Mr. Walter George, a former Soane Medallist, is going out to Constantinople and the East after Christmas for six months to undertake a definite course of Byzantine study, and Mr. Ramsay Traquair, also a former student of the Institute, is going to Greece and the Ægean on a similar mission. All this means outlay; and if architects will only come forward and help substantially, this country may still take a high place in this interesting branch of study, equivalent to that held in the days when it was foremost in the study of Hellenic architecture in the hands of such men as Cockerell and Penrose. Here is a work ready to hand and in the doing, and architects will show how much they are really in earnest in their desire for their students to emulate those of other nations by the spirit in which they support it, and in supporting it they will also be supporting the already-existing British equivalents of the Villa Medici, viz., the British Schools at Athens and Rome, with which this fund is in active association.

ROBT. WEIR SCHULTZ.

* The annual meeting of the British School at Rome is to be held in the rooms of the Society of Antiquaries, Burlington House, on Tuesday, November 17, at 5 p.m., Sir W. R. Anson in the chair. A selection of architectural drawings by students of the school will be on view.

DISTRICT CHURCH, ARMLEY.—A district church, dedicated to St. Hugh, is being built in the parish of St. Bartholomew's, Armley. Mr. H. S. Chorley is the architect for the work, the total cost of which will be 3,500*l.*

NEW CHURCH, EPSOM.—The Bishop of Dorking recently laid the corner-stone of the new church of St. Barnabas, Epsom. The church is being erected from the plans of Messrs. A. C. Williams and W. G. Houseman, and the work is to be carried out in two sections. When the church is completed there will be accommodation for 580 people; at present provision is being made for 300. The builders are Messrs. G. E. Wallis & Son, Maidstone, whose contract price for the erection of the present part of the church is 3,340*l.* The building of the whole church will cost 5,800*l.*

ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS.

THE fourth annual general meeting of this Association was held at the St. Bride Institute, Fleet-street, E.C., on the 7th inst.

Mr. Harrap, President of the Association for 1907-8, in the chair.

In moving the adoption of the annual report, Mr. Harrap congratulated the members on the steady growth and development of the membership, work, and influence of the Association. The annual report and financial statement were adopted after some discussion on the general policy of the Association.

The newly-elected President of the Association is Mr. J. Wilson, M.Sc., Head of the Chemical Department, Battersea Polytechnic, who has acted as honorary secretary of the Association since its formation in 1904. His successor in that office is Mr. P. Abbott, B.A., Head of the Mathematical Department, Regent-street Polytechnic.

At a meeting of the London branch of the Association, held in the evening, a paper was read by Mr. W. J. Lineham on "Technical Education at the Franco-British Exhibition." After a criticism of the unsatisfactory character of the classification adopted in the Educational Section, special reference was made to the excellent exhibits of the work of Trade Schools, Schools of Arts and Crafts, and the Technical Institutions. Clear evidence was given in the Exhibtion of the great steps which have been taken in the direction of the co-ordination of education and "group courses." The excellence of the machine-shop work in the French Educational Section was pointed out.

Regret was expressed that no steps have been taken by the Board of Education to retain the exhibits permanently. It was hoped that a similar Educational Exhibition would be held, say, every five years as a guide and stimulus to all engaged in education.

THE SWELLING OF PORTLAND CEMENT.

HERR CADOLET, in the *Thoninder Zeitung* of 1908, details experiments with a large number of cements showing that all absorb water and increase in volume, or swell, in a remarkable manner when shaken with water in the proportion of 54 grains to 60 cubic inches of water. The treatment consisted in continuously shaking the mixture not too violently for twelve hours, then shaking at least once an hour for another twelve hours, and finally shaking three times a day until swelling took place. This happens after one to eighty-four days, generally after two to three days, and continues for five to twenty-four days, generally six to eight days. Shortly before "swelling" takes place the cement rapidly settles, after shaking. During the "swelling" the cement increases in bulk so much that 416 grains occupy about 305 to 366 cubic inches; the bulk then diminishes slightly, and remains constant for an indefinite time.

The swelling always commenced when the water above the cement had taken up 4 grains to 4½ grains of lime per litre (61 cubic inches), and stopped when 7 to 9½ grains of lime per litre had been dissolved, about 20 per cent. of the lime in the cement being dissolved. Cements shaken with water already containing 5½ grains of dissolved lime per 61 cubic inches swell within fifteen minutes, but the increase in bulk is less than when water only is used. Passow cement, which is one that is poor in lime, only swells after nine months in water, but after six days if a solution of lime is used. Cement shaken with 10 per cent. sugar solution did not swell, neither did it when shaken with strong solutions of lime, or with so much water that the minimum concentration of 4½ grains of lime per 61 cubic inches (mentioned above) could not be attained. In sea-water no swelling occurred until after the whole of the magnesia had been precipitated. With a 10 per cent. solution of

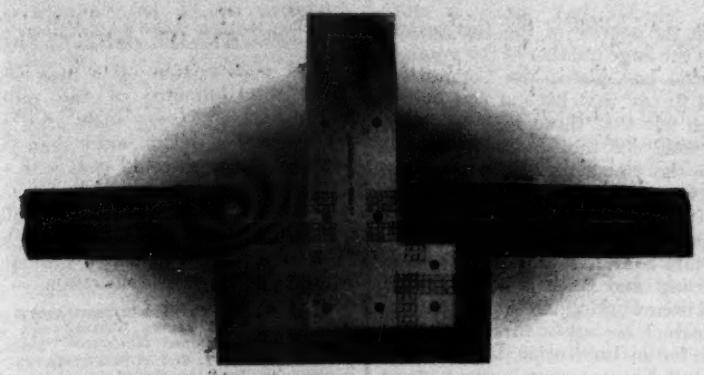


Fig. 1. Re-inforced Concrete Column of a Power-House.

common salt swelling was delayed and became less voluminous; and a solution of calcium sulphate acts in a similar manner. If the swollen cement was filtered off, then the water pressed out as far as possible, and the very soft pats obtained left in air for twenty-four hours, and then placed in water, a marked hardening took place, some of the pats so obtained standing the boiling test well. Analysis of the lime solutions obtained during the experiments showed that if glass bottles were employed small quantities of silica were present, but this could be obviated by using zinc bottles.

Herr Michaelis (senior), the Portland cement specialist, states that by removing the water as far as possible by pressure from colloidal hydroxides, and then leaving them to harden, very high values for compression tests had been obtained. The highest results were:—

		Per sq. in. (approx.)
For lime	105 kilos. per sq. c.m. =	1,500 lb.
„ silica	985 „ „ „ „ =	14,000 „
„ alumina	635 „ „ „ „ =	9,000 „
„ ferric hydroxide	805 „ „ „ „ =	11,400 „

He has found that a solution containing one part of lime in twenty thousands of water dissolved silica to the extent of one part in twenty-four thousand, whilst a lime solution of one per thousand only dissolved one part of silica in 1,360,000 parts of solution.

RE-INFORCED BRICKWORK.

We give three illustrations from the pamphlet circulated by Messrs. Johnson Clapham & Morris in illustration of their system of wire mesh bonding for brick walls and for bonding brickwork to re-inforced concrete piers.

Fig. 1 is the plan of a pier and part of the wall of a power-house 40 ft. high, with the walls of only 9 in. brickwork strengthened and tied by wire bond in the brickwork and between brickwork and concrete piers. It is stated that this wall has successfully withstood the test of the pulsations of large gas engines.

Fig. 2 shows the same class of construction but with a hollow wall formed of half-brick and brick-on-edge with wire re-inforcing; and Fig. 3 shows a re-inforced concrete pier with the ends of the wire meshes left projecting to form a bond for the brick facing.

It is claimed that with this system brick-on-edge partitions can be securely erected.

It is certainly worth attention, though, as already remarked in a previous notice, it is not "monolithic brickwork," and the title is a misnomer, and should be altered to "re-inforced brickwork," which would be the correct description. In regard to the facility which it presents for building cavity walls without using a large amount of material or running to an inconvenient thickness of wall, that is unquestionable; but our opinion has always been against cavity walls, as we think it undesirable to have in any building hollow spaces which are permanently inaccessible, and where it is impossible to know what may be going on. That is a matter, of course, on which there are differences of opinion; hollow walls have their advantages; but on the whole we are against their use. But the system of re-inforced brickwork here shown, and the manner of bonding it to re-inforced concrete, may prove an important means of obtaining strength in brick walls with a minimum of thickness.

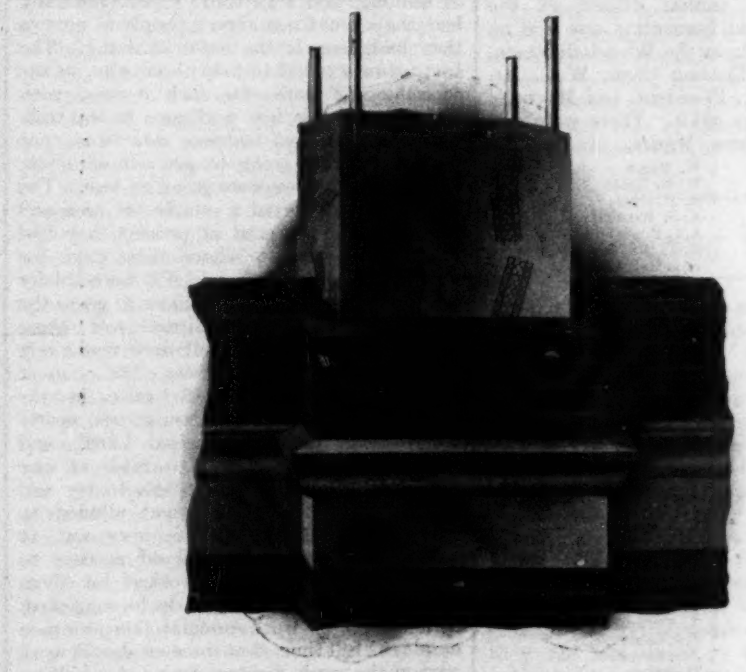


Fig. 3. Concrete and Brickwork Column, showing Wire Bonds Projecting for Bonding Brick Facing.

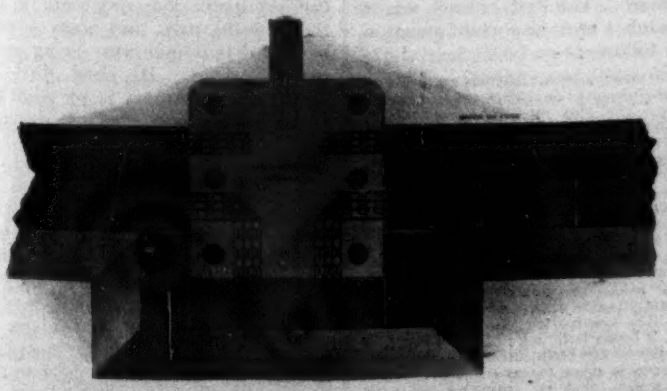


Fig. 2. Re-inforced Concrete Column and Method of Bonding in Re-inforced Brick-on-edge Partitions.

SOCIETY OF PAINTERS IN WATER-COLOURS.

We are compelled for once to record the Winter Exhibition of the Society as a disappointing one. Some of the ablest of its members—Mr. E. R. Hughes, for instance, and Miss Fortescue-Brickdale, are not up to their usual level in figure pictures; and the landscapes include a good many which are not of the highest interest. There are, on the other hand, an unusual number of architectural pictures, many of them very good.

The most important work is perhaps Mr. Anning Bell's large picture, "Queen Hippolyta's Bath: the Amazon Guard"; a grand piece of composition and colour, regarded as a whole. Among the landscapes the finest is certainly Mr. Colin B. Philip's bold mountain foreground, "Hot July," with the great distant peak looking over the ridge of the foreground hills. Mr. Philip, in scenes of this type, has a remarkable faculty for giving the impression both of scale and atmosphere. Mr. Eyre Walker's small and delicate landscapes represent the best and most healthy traditional school of water-colour art; Mr. Paterson's represent the new school, with great ability and sense of colour, but with too much the impression of having been painted on blotting-paper. A feature has been made of some of the early drawings of the late veteran artist Callow, of which "Ben Garve," painted in 1861, is one of the most satisfactory works in the Exhibition, and forms a pleasant reminder of the broad and free school of old water-colour art. In a very different way Mr. Albert Goodwin's sunset scene at St. Leonards, with the grey expanse of wet sand in the foreground—a highly-wrought effect—is a fine thing; also his little sketch called "Wind on the Hill," a beautiful suggestion for a picture. The Winter Exhibition, it may be remembered, is nominally one of "Sketches and Studies," or was first instituted as such, though this liberty is ignored by most of the members, but it justifies such slight studies of figure subjects as those of Mr. Hopwood, which are very clever as studies.

Among the architectural subjects Mr.

R. W. Allan has been sketching the streets and market of Assisi. Mr. Rooke exhibits a very carefully painted picture of the brick front of the Church of Le Monastier, Haute Loire, a fine piece of Romanesque work admirably portrayed; this is one of his set of architectural subjects for the Birmingham Museum, of which a good many others have been exhibited here. Lord Carlisle's "Dacre Tower, Haworth," is an admirable architectural drawing, quite above the average of amateur work of this kind. Mr. Rooke has also a good drawing of St. Bartholomew's, Smithfield, and another of the Cathedral of Le Puy. Mr. Allan, in addition to his Assisi scenes, sends drawings of Montreuil-sur-Mer (a great haunt of English artists lately). As usual, there are several admirable representations of architecture by Mr. Reginald Barratt—"The South Door of St. Mark's," "The Sphinx," and "The Piazzetta, Venice." The drawing of the sphinx is a remarkable one, taken from a nearly side view, and showing the long mass of half-ruined masonry which once formed the body of this colossal sculpture; though on a small scale, this is a very impressive picture.

THE BUILDERS' BENEVOLENT INSTITUTION.

THE sixty-first annual dinner of the Builders' Benevolent Institution was held on Thursday last week, in the Whitehall Room, Hôtel Métropole, Charing Cross, W.C., Mr. J. W. Lorden, J.P., President, and Mayor of Wandsworth, in the chair. There were also present, among others, Messrs.

S. Allen
Detmar Blow
J. T. Bolding
G. Bartlett
W. E. Buchanan
C. B. Broad
C. Bussell
F. J. Barnes
C. J. Bennett
R. B. Brierley
Stephen Collins, M.P.
G. L. Crickmay
J. W. Chessum
B. Carter
F. S. Chesterton
J. Howard Colls
A. B. H. Colls
H. J. Clark
J. Clark
C. J. Clark
T. S. Cotterell
Walpole Collins
A. D. Dawnay
A. J. Dearberg
W. Downs
A. C. David
W. F. Faldo
F. Forbes
J. O. Foster
F. W. Foster
A. B. Falkner
S. Gordon
G. B. Godson
W. Garrett
J. Garrett
W. T. Graves
H. S. Greenwood
C. Gude
H. J. Hills
F. Higgs
W. Higgs
W. M. Higgs
H. P. Higgs
A. J. Harding
A. C. Finch Hill
R. J. Holliday
B. I. Hellyer
A. J. Jaques
W. Lawrence, jun.
W. Lawrance (President London Master Builders' Association)
W. Lawrance, F.S.I.
B. J. W. Lone
L. J. Maton
J. Macquire
Guy Nicholson
H. Northcroft
W. E. Ollif
W. Pangbourne
J. F. Parker
J. Randall
L. C. Randall
E. S. Rider
A. Ritchie, J.P.
A. J. Radford
W. J. Styles
T. Stirling
T. Stirling, jun.
Jos. Sabey
Jas. Sabey
H. Sabey
A. K. Steven
J. Wise
W. F. Wallis, J.P. (President Southern Federation)
J. Wood
Douglas Young
T. Costigan (secretary)

The loyal toasts having been proposed by the President and suitably honoured,

Mr. J. Howard Colls, Treasurer of the Institution, proposed the toast of "The Builders' Benevolent Institution and its President." He said they were all glad to see Mr. Lorden presiding on that occasion, and he (the speaker) was very glad when Mr. Lorden, in spite of his many other duties, consented to act as their President. Mr. Lorden took the chair at a time when trade was in a very depressed condition—perhaps the most depressed condition within the memory of anyone in that room. He had often heard of trade being bad and of men being out of work, but surely there never was a time when so many good men of all sorts and kinds were absolutely in want of work. As a rule they could formerly get some sort of work during the winter months, but the percentage now of unemployed was awful to think of. They were all full of sympathy for men who were in that position—a position they did not deserve; and there was something wrong somewhere which prevented building enterprise going on. There was one thing which struck him as Treasurer and as a man old in the service of the Institution, and that was the large number of the younger generation who had joined the Committee. He was glad to say that his son was one of them, and he felt that those who had done what they could for the Institution ought to encourage the younger men to follow up this work. One result of joining the Committee was that the men who served the Institution seemed to grow young in the service, as could be seen in the case of Messrs. Bolding, Stirling, and Bussell—three typical men who had been working for the Institution for many years. No other three men had done so much for the Institution, but although they had grey hairs they were quite boys at heart. In these bad times it was all the more necessary to help a cause like that of the Institution.

The President, who was received with musical honours, said, in reply, that the present was a bad time to make appeals on behalf of such a charity as the Builders' Benevolent Institution, and in making his appeal he had had many refusals on account of bad trade from those who had previously helped the charity, and from others. For that reason he was afraid he would not be able to do as well for the Institution as his predecessor, Mr. Higgs, but his excuse must be that it was impossible to get something out of nothing, and with trade so exceptionally bad they could not expect people to give as they had been in the habit of doing. The Institution existed to help those who, in the scramble for work—for such it was, with little to scramble for—had gone to the wall. The question for builders now was, not what they were going to get out of a job, but how little they were going to lose. The Institution supported a number of men and women pensioners, and at present they had thirty-three men to whom they paid the sum of 42*l.* a year each, and if it were not for that help those men would have to go to the workhouse. The expenditure was some 2,600*l.* per annum, and all they could rely upon from investments was 725*l.*; so it followed that they had to raise in the way of donations and subscriptions nearly 2,000*l.* Last year they raised 1,888*l.*, and that was a big amount to raise at any time, and now it was hopeless to try and get as much. Mr. Colls had alluded to unemployment, and it was very sad to see so much of it. It grieved masters to discharge men who had worked for them for years, and in his own works he suggested, as there was not work enough to keep his men employed full time, that the men should work part of the week, for two days and a half instead of five. His men, believing that half a loaf was better than no bread, and being sensible fellows, many of whom worked with him at the bench as boys, fell in with the idea, much to his pleasure, for he was afraid that they would say the trade rules were against that sort of thing; though if they had that would have meant a long holiday with no money. He had been much struck by some remarks in the Quarterly Report of the Builders' Foremen's Association, written by men who seemed to have some grit in them, and so much struck was he by what he read that he intended to read the remarks in question to them. The first extract was as to unemployment, a most important question, and it was as follows:—

"This question of unemployment that was receiving our attention last year seems to-day little or no nearer a practical solution. The idea of *finding work for the unemployed* is almost the only idea advanced now; although in the terms of the case this can be but a palliative of present suffering. Of course all forms of suffering have a claim on the sympathies, and, where possible, on the practical help of others. But the removal of the *cause* is needed to *cure* the disease of which the suffering is but a symptom. Money raised to carry out public works is but to beg or forcibly collect it from one section of a community and gratuitously hand it over to another, unless that money is made to represent *capital profitably employed*, giving in the finished product an increase of value upon the money raised for its production. The contention that employment, though profitless, is better than doles of charity without it, because it relieves the recipient of the degrading sense of dependence is open to very grave question, for the twofold reason, that by obscuring the issue, good-meaning people are often led to believe that profitless employment is a remedy for unemployment, and by compelling the more skilled forms of labour holding posts of supervision to tolerate inefficiency, all are demoralised."

That was written by a man who understood the difficulty of the problem. In doling out relief very little good was being done, for that did no more than put off the evil day. They should deal with the cause, *i.e.*, how to get more work for our skilled men, so as to eliminate the unskilled as far as possible. Another remedy had been suggested, and he would again quote from the Report of the Association:—

"There has been of late years such a repletion of indignant protest among working men against the injustice of "unearned increment" passing into the pockets of the few, and of remedying this "monstrous iniquity" by the "taxation of ground values," that they appear to have been too busy to see that a revival of trade among, say, terra-cotta workers with the accruing advantages due perhaps to public taste or to an architect's selection of this material as being under particular circumstances superior to stone, is just as really a case of "unearned increment" as the advantage derived from an increased demand for houses and land in the district of a growing neighbourhood. Or the advantage derived by the proprietor of dining and coffee rooms in, say, a country district where fifty fresh men come to live in the locality for nine months to build a church. Yet these are all cases of "unearned increment" pure and simple. Now if these incidental advantages should be yielded up in one case, for distribution among the community, why not in all? But if that were done still those who had played no part in creating the advantage would by their share be receiving "unearned increment" and the imaginary injustice would not be removed."

If builders' foremen, many of whom had come from the ranks of the workmen, could reason in such a sensible way, why could they not pass such ideas on to the workmen? He hoped, at all events, that they would see the necessity of going deeper into this question of unemployment than was the case at present. There was a good deal to be said for the hungry working-man, who was not always judicious in his attempts to get food. The question was to get at the root of the evil and work upwards and not downwards, as we were now doing. The workmen had combined to a certain extent, and had formed trades unions, and where those unions assisted to find employment or help in sickness or old age they were to be greatly commended, but where they interfered with the liberty of men they were to be condemned. The President concluded by making an earnest appeal on behalf of the Institution.

The President subsequently added that a gentleman who had long taken a great interest in the Institution had made a will, leaving the bulk of his property to the Institution, but, unfortunately, shortly before his death he made a codicil, taking it all away again. A Committee, consisting of Messrs. Colls, Higgs, and Stirling, had, however, laid the needs of the Institution fully before the lady who took a large part of the property, and after considerable negotiation she had kindly consented to contribute a sufficient sum to found a female pension to be called the "Louisa Richardson pension."

Mr. F. Higgs, Past-President, having explained at some length the matter of the Richardson pension, proposed the toast of "The Architects and Surveyors." He had had, he said, an opportunity in late years of studying the works of architects of past ages, and he had been filled with admiration for those who had left us those monuments of their genius and their art. In his opinion the architects of to-day were no whit behind those of the past, and many substantial and beautiful buildings were being erected at the present time. He had just looked in Johnson's Dictionary to see what an architect was, and he found he was described as "a builder," with the alternative of "a contriver of anything." Then he turned to "builder," and he found him defined as "one who builds; an architect." That proved that architects and builders were brethren in one craft. Builders tried to carry out the ideas of architects in the best way they could, but, of course, the chief credit lay with those gentlemen who had the ideas. While he admired architects for their work and their artistic ability, he found there were architects and architects—some who were slipshod in their ways, others who were very particular;

and some who wanted to be architect, builder, clerk of works, and everything else. He liked architects to trust builders to carry out more of their work themselves so that they will not, as now seems likely, become financial agents only. He had been brought up in the old school, and was taught to do all he could himself—to be a craftsman, and not a man with a brass plate on his door and half a dozen telephones on his desk in communication with sub-contractors. He thought builders should have a better chance than they were now given by the employment of so many sub-contractors on a job, and he appealed to architects to exercise more strictly the contract clause as to sub-contractors and sub-letting. Builders were greatly indebted to surveyors for their care, energy, and integrity. With the toast he coupled the names of Mr. G. L. Crickmay and Mr. W. Lawrance.

Mr. G. L. Crickmay, who responded for the architects, having referred to the bad state of trade at the present time, said that the extracts the President had read were good and suggestive, and there was no doubt that some system of insurance paid out of wages would have to be adopted to provide for periods of unemployment; a system of doles was not a permanent or an economical method of dealing with the difficulty. An architect had to be many-sided, but if he were not an artistic man he ought not to be called an architect. Ruskin said it was no use calling him an architect unless he was a painter and a sculptor. This was a utilitarian age, and we were told that there was no need for an architect in the erection of a building. He did not think that statement would be endorsed by them, for they knew by experience that the value of a building was enhanced very considerably if it were an artistic building rather than a commonplace one. Architects tried to make their buildings as beautiful as they could both in plan and elevation—not necessarily full of ornament, for ornament was only one of the artistic qualities, though all buildings should have it in order to give interest to the design, but it must be well-considered and suitable ornament. He knew that builders felt very strongly on the subject of sub-contracting; and he quite agreed with them. His own view was that as much of the work as the general contractor was able to carry out *well* should be left in his hands so as to give him greater interest and responsibility in the building and to feel a pride in the finished work, and by that means the best result would be obtained. The British workman at his best was still able to do first-class work, as good as could be seen anywhere either at home or abroad, and a good builder carried out his business in a sound and satisfactory way.

Mr. W. Lawrance suitably replied for the Surveyors. Surveyors were glad to be associated with builders in the noble work of assisting those who had fallen by the way.

Mr. Stephen Collins, M.P., then proposed the last toast, "The Vice-Presidents, Committee, and Stewards." In the course of his remarks he said that although trade was bad, it had been bad before, and yet had recovered; and there was no doubt it would recover again.

Mr. J. T. Bolding, whose name was coupled with the toast, briefly replied. The greatest pleasure of the officers of the Institute was when they could carry on the work without coming upon their funded property, but during the past year, unfortunately, they had to entrench on those funds. The Institution was well managed, and it tried to accept pensioners without putting them to the bother of an election.

During the evening subscriptions and donations to the amount of 820*l.* were announced. The President's list included the sum of 100 guineas from the President himself; 50*l.* from the Institute of Builders, and 10 guineas or over from the Associated Portland Cement Manufacturers, 1900, Ltd., Mr. G. Burt, J.P., Messrs. J. Mowlem & Co., Ltd., Messrs. Trollope & Sons, and Colls & Sons, Ltd., Lady Amy Tate, Messrs. Mackrell & Co., and Messrs. Lawrence & Son.

THE SURVEYORS' INSTITUTION:
PRESIDENT'S ADDRESS.

THE opening meeting of the new session of the Surveyors' Institution was held on Monday, at No. 12, Great George-street, Westminster, when the Presidential address was delivered by Mr. Howard Martin. The address dealt mainly with the effect of the exercise of sporting rights in hunting and shooting on rural property, and the President's conclusions were that the time might come when the increase of the rural population and the subdivision of rural land into small holdings might be so extensive as to render hunting and shooting practically impossible; and if such a change in rural conditions was justified by the circumstances it would occur, and hunting and shooting with all their advantages must give way before it. But meanwhile there was no reason why those sports should not be encouraged and their advantages enjoyed without injury to anyone by the exercise of the mutual goodwill and forbearance which was almost invariable in the relations between agriculturists and good sportsmen.

An active membership of the Institution for thirty-two years was enough to enable anyone to form an opinion as to the progress of the Institution and profession during that period, and on the whole he thought the comparison was encouraging. There was no doubt that, speaking generally, young surveyors of the present day start on their professional careers with a better grounding of theoretical knowledge than their predecessors of thirty years ago; that there was far more unity of feeling and interest among the members of the profession all over the United Kingdom; that the profession, speaking through the Institution on subjects within its province, had more weight with the Government and the public generally; and that the average standard of members of the profession had been distinctly raised from all points of view; and he did not think it could be doubted that this improvement was largely due to the work and influence of the Surveyors' Institution. There was, however, one respect in which it appeared to him there were signs of serious deterioration, or what might lead to serious deterioration, in professional practice. It was the very foundation of a surveyor's professional position, and of the full confidence which it was so much to the benefit of both that surveyors should receive from their employers, that the remuneration of surveyors should come from the clients for whom they act, and from them alone; and in no case was this principle of more importance than in the purchase and sale of property. Moreover, there was no branch of a surveyor's business in which, in many cases, the advice and assistance of a competent surveyor was more valuable than in such transactions; and it was of the utmost importance that in buying or selling as an agent a surveyor should not look directly or indirectly for commission, except when selling to the vendor and when buying to the purchaser. Thirty years ago, clients, having instructed a surveyor to sell, left the business in his hands, and relied on him alone to do the best for their interest; and those requiring information or advice or assistance from a surveyor in purchasing were willing to pay the surveyor they employed for the assistance he gave. Comparatively recently, however, it had become quite common for surveyors (even some of good standing and position) to ask for and often obtain a share of commission for the introduction of a purchaser of property as to which they had no instructions, and belonging to persons for whom they were not acting and never had acted. It was true that surveyors of respectability would only make such applications to the vendor's agent and not to the vendor direct; but he ventured to think this only made the practice a degree less objectionable, and not at all less dangerous, than applying to the vendor. It was not only that the practice if followed by reputable men provided a cloak under which some who were less particular try to live on the connexions of others by suggesting possible purchasers who did not really exist in order to get particulars of properties on their books on the chance of being able to find a purchaser; but it tended to put both agents and clients in such cases in a very false position. It was now quite common for intending purchasers, having become aware of this practice, to endeavour to obtain the advice and assistance of a surveyor in buying, on the understanding that he was to be paid by getting a share of the commission of the vendor's agent; and surveyors, especially men with businesses to make, were tempted to try to get paid by the vendor's agent while they were in reality doing their best for the purchaser. It appeared to him that the evil, if it continued, would soon reach such proportions that it would not be worth while for any man, determined to do such business on professional principles, to do it at all; and indirectly to jeopardise very seriously the maintenance of the mutual confidence between surveyors and their clients, on which alone the real advantage of both must be based; but, unless surveyors of good standing all unite to abstain from asking for or consenting to such arrangements, it would be impossible to stop or even to check this serious danger to the best interests of the profession.

A hearty vote of thanks to the President for his address brought the proceedings to a close.

Engineering Societies.

JUNIOR INSTITUTION OF ENGINEERS.—A numerously-attended visit of this Institution took place recently to the works of the Limmer Asphalte Paving Company, Blackwall. Under the guidance of Mr. H. D. Blake, Director and General Manager, and members of the staff, the party were shown the complete processes of manufacture, including the crushing of raw material, heating, manipulation into mastic blocks for roofing, flooring, etc., and preparation of compressed powder for carriage-ways. Great interest was evinced in the Lithofalt block-making machine. The mineral asphalt blocks are produced under a pressure of 150 to 200 tons; they are laid down in the same way as ordinary wood-paving blocks, and it is claimed that they possess several important advantages as compared with wood, namely, durability, elasticity, and absence of noise.

PROPOSED MUNICIPAL IMPROVEMENTS, BANGOR.—Mr. A. D. Price, M.Inst.C.E., Local Government Board Inspector, recently held an inquiry in the Town Hall, Bangor, into the Urban Council's applications for sanction to loans for the following purposes:—(1) Waterworks, gasworks, promenades, and the provision of a stoneyard, 7,500*l.*; (2) erection of a technical school, 1,250*l.*; (3) supplemental for the purchase of a motor-wagon and trailer, 300*l.* Mr. E. L. Woods, C.E., the City Surveyor, was among those who gave evidence.

LIVERPOOL CATHEDRAL.—A meeting of the Liverpool Cathedral Committee was held on the 2nd inst., when it was reported that there are now 256 men employed at the building. In addition to the foundations, which cost 40,000*l.*, a sum of 50,000*l.* has already been expended on the structure. Good progress has been made with the groining of the roof of the Lady Chapel, and the walls of the choir have reached a height of 31 ft. 6 in. The building of the piers of the four towers is being proceeded with. A communication was received from the Freemasons that the money promised for the chapel-house, to be built in memory of the late Earl of Lathom, had been raised, and the Committee are taking steps to make the necessary arrangements to proceed with this work. It is hoped that the Lady Chapel will be completed in about eighteen months.

THE BUILDER

NOVEMBER 14, 1908.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and not to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 28s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 24s. 6d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

Remittances (payable to J. MORGAN) should be addressed to The Publisher of "THE BUILDER," 4, Catherine-street, W.C.

MEETINGS.

FRIDAY, NOVEMBER 13.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. Davis on "The Construction and Working of a Septic Tank and Circular Bacterial Percolating Filters." 8 p.m.

SATURDAY, NOVEMBER 14.

Junior Institution of Engineers.—Visit to the Selfridge Store Building in Oxford-street. 2 p.m.

MONDAY, NOVEMBER 16.

Royal Institute of British Architects.—Mr. J. Alfred Gotch, F.S.A., on "The Elizabethan House as Illustrated by Contemporary Architectural Drawings." 8 p.m.

London Institution.—Mr. H. Beaumont on "A Tour in Central France, including the Cathedrals of Bourges and Tours," illustrated. 5 p.m.

University of London (South Kensington, S.W.).—Mr. Banister Fletcher on "The Renaissance Architecture in Venice," illustrated. 8 p.m.

TUESDAY, NOVEMBER 17.

Junior Institution of Engineers (at the Royal United Service Institution, Whitehall).—Mr. James Swinburne, F.R.S., M.Inst.C.E. (President Elect), will deliver his inaugural address on "Available Energy." 8 p.m.

Institution of Civil Engineers.—Paper to be further discussed, "Glasgow Central Station Extension," by Mr. D. A. Matheson, M.Inst.C.E. 8 p.m.

WEDNESDAY, NOVEMBER 18.

Byzantine Research and Publication Fund (at the Rooms of the Society of Antiquaries, Burlington House, Piccadilly).—Address by Mr. Frederic Harrison, and an account of the work of the Fund. 4.30 p.m.

Royal Society of Arts.—Opening meeting of session. Address by Sir W. H. White, K.C.B., LL.D. 8 p.m.

Northern Architectural Association (Students' Meeting).—Mr. H. W. Mole on "The Norman Period, with special reference to the work at Durham, Lindisfarne, etc." 7.30 p.m.

THURSDAY, NOVEMBER 19.

Institution of Electrical Engineers.—(1) Distribution by Col. R. E. Crompton, C.B., the retiring President, of premiums awarded for papers read during Session 1907-8. (2) The President, Mr. W. M. Mordey, will then deliver his inaugural address, and afterwards hold a reception in the Library. 8 p.m.

FRIDAY, NOVEMBER 20.

Architectural Association.—Mr. J. B. Fulton on "The Church of Santa Sophia." 7.30 p.m.

Institution of Mechanical Engineers.—(1) Mr. T. E. Stanton, D.Sc., and Mr. L. Bairstow, of the National Physical Laboratory, Teddington, on "The Resistance of Materials to Impact." (2) Mr. F. W. Harbord on "Different Methods of Impact Testing on Notched Bars." 8 p.m.

Birmingham Architectural Association.—Mr. W. Curtis Green on "Students' Studies."

Fifty Years Ago.

FROM THE *Builder* OF NOVEMBER 13, 1858.

DRINKING-FOUNTAINS.

MUCH surprise has been expressed that the authorities of St. Pancras should have refused the offer of Mr. Gurney to erect at his own cost a fountain for the use of the multitude of passengers in the neighbourhood of King's Cross. There can be no doubt of the need for such fountains in the great thoroughfares of the metropolis, for the use of both human wayfarers and animals. Considering, however, the evil condition of water procured from the bowels of this wide district of populated earth, it is not to be desired that street fountains should be supplied from this source, but with the filtered and best water from the different companies' mains.

Considering the large sum which has been charged to parishes for the supply of water in certain cases necessary for health and convenience, it is to be feared that the charge for the annual supply of street fountains would be very large; and it has been said that this large payment would be necessary for free public fountains, because the erection of them would be likely to damage, in some measure, the revenues of the companies. We can scarcely think that this will be the case; for, although some of the water-starved poor may rush from their courts, in the same manner as they do from Gray's Inn-lane to the pump in Gray's Inn-square, and draw a bottle or jug of water, the street fountains would in no way interfere with the extent of the water-supply of the houses. It has been suggested that provided well-disposed and benevolent individuals were to erect street fountains in necessary places, the water companies, without being much out of pocket, might grant the necessary supply free. It would only be during the summer months that they would be in great demand.

Nearly all the wells of the metropolis have been closed as a matter of necessity, and a poor person may travel for long distances without being able to say that his "water is sure."

In former days the conduits of London, and of most of the old towns of England, formed important architectural features; and this is their characteristic on the Continent at the present day. It is to be hoped that, in the erection of these new works, the best architectural and sculptural skill may be employed; so that the fountains may be made not only a great public accommodation, but also things of beauty in the streets.

*** The fountains have been supplied, but unfortunately the recommendation, fifty years ago, that the fountains should be artistically treated and be "things of beauty," seems nearly as much called for in the present day.—ED.

Illustrations.

PREMISES, HATTON GARDEN.

THIS is a reproduction from one of a series of photographs which have been taken for us of various examples of London street architecture.

The design had been illustrated from a drawing of the architects, in our issue of October 27, 1906, when a plan and short description were given; but the photograph gives a much better idea of the work.

Messrs. Niven & Wigglesworth are the architects.

AN INNER HALL AND GALLERY.

IN designing this room the intention has been to retain the breadth and majesty of Elizabethan work, chastened of much of the crude detail that appears coarse and out of place in association with present-day surroundings; so, too, in the furniture of the room an easier style has been adopted, better suited to the exacting ideas of ease an comfort now existing. The room has bee designed for a house in New York, and is to be carried out in fine mahogany, oiled but not polished; the furniture of English walnut inlaid with black and rosewood; the large decoration over the ingle is to be painted by Mr. H. D. Richter in a low rich scheme of colour.

The drawing, of which Mr. H. D. Richter is the author, was exhibited at the last Royal Academy.

ST. DEINIOL'S LIBRARY AND RESIDENCE, HAWARDEN.

THESE buildings have been erected near the old Parish Church of St. Deiniol, on the brow of a hill commanding fine views of the Dee estuary and the Wirral peninsula.

The western portion contains the library, divided into two large rooms open to the roof and surrounded with galleries, with warden and sub-wardens' rooms, and has been built as part of the National Memorial to Mr. Gladstone. To this there has been added by the members of his family, and in furtherance of the intent of the illustrious founder of the Institution, the eastern wing, consisting of residential quarters for the permanent staff and the household servants, wherein also accommodation is provided for some seventeen visitors or students. In this wing on the ground floor there is an oratory, a dining-room, and a large and sunny common room, with bedrooms and bath-rooms on the first and second floors.

For the custody of the late statesman's many important MSS. and documents of historic interest there is a fireproof strong room on the ground floor.

Externally, the walling and dressings are of Runcorn stone throughout, and the roofs are covered with Westmorland olive-green slates.

The interior woodwork of the library, which has an open-timbered roof, is oak, and the principal rooms of the residence have been furnished in the same material.

Messrs. Parker Brothers, of Chester, were the general contractors. Messrs. Douglas & Minshull were the architects.

LANDSCAPE FOR WALL DECORATION.

THIS is a design by Mr. P. A. Wise, a student of the Royal College of Art, showing a landscape designed to fill a defined space on the wall of a room, as a permanent decoration.

The author seems to have been influenced by the "Liber Veritatis" in regard to the style and treatment of the landscape. The foreground figure is cleverly placed so as to appear to have a relation to the mantelpiece and pedestal under it.

DRAWING OF DOORWAY FROM CAREY-STREET.

MR. F. W. CHANDLER, whose name was placed on the above-named drawing which we published last week, writes to say that this is a mistake; the drawing was by a fellow-student, Mr. Charles W. Taylor.

It was mounted on the same frame with a measured drawing by Mr. Chandler, and hence the mistake on the part of our representative, who sent the proof to us with Mr. Chandler's name as the author, having not noticed that his name only applied to one of the drawings and not to both. The printed name was inserted in our plate to make it more complete.

We are now sending Mr. Taylor presentation proofs of the drawing with the author's name corrected.

TECHNICAL EDUCATION.—The Education Committee of the London County Council have selected the following gentlemen to act as examiners for specified subjects for the educational year 1908-9:—Building construction, Mr. A. Randall Wells, A.R.I.B.A.; quantity surveying, Mr. Arthur Wells, F.R.I.B.A.; sanitary engineering, Mr. G. Smith, A.S.I.

one an
has bee-
, and is to
oiled but
lish what
the large
painted by
scheme of

D. Richter
t the last

AND
EEN.

ed near the
on the brow
of the Dee

the library,
t to the roof
with warden
been built
rial to Mr.
been added
d in further-
ous founder
under
wing, con-
the perma-
nts, wherein
d for some
n this wing
oratory, a
any common
ooms on the

statesman's
documents of
proof strong

ssings are of
d the roofs
olive-green

the library,
oof, is oak.
he residence
material.
hester, were
. Douglas &

ALL

A. Wise, a
Art, showing
defined space
a permanent

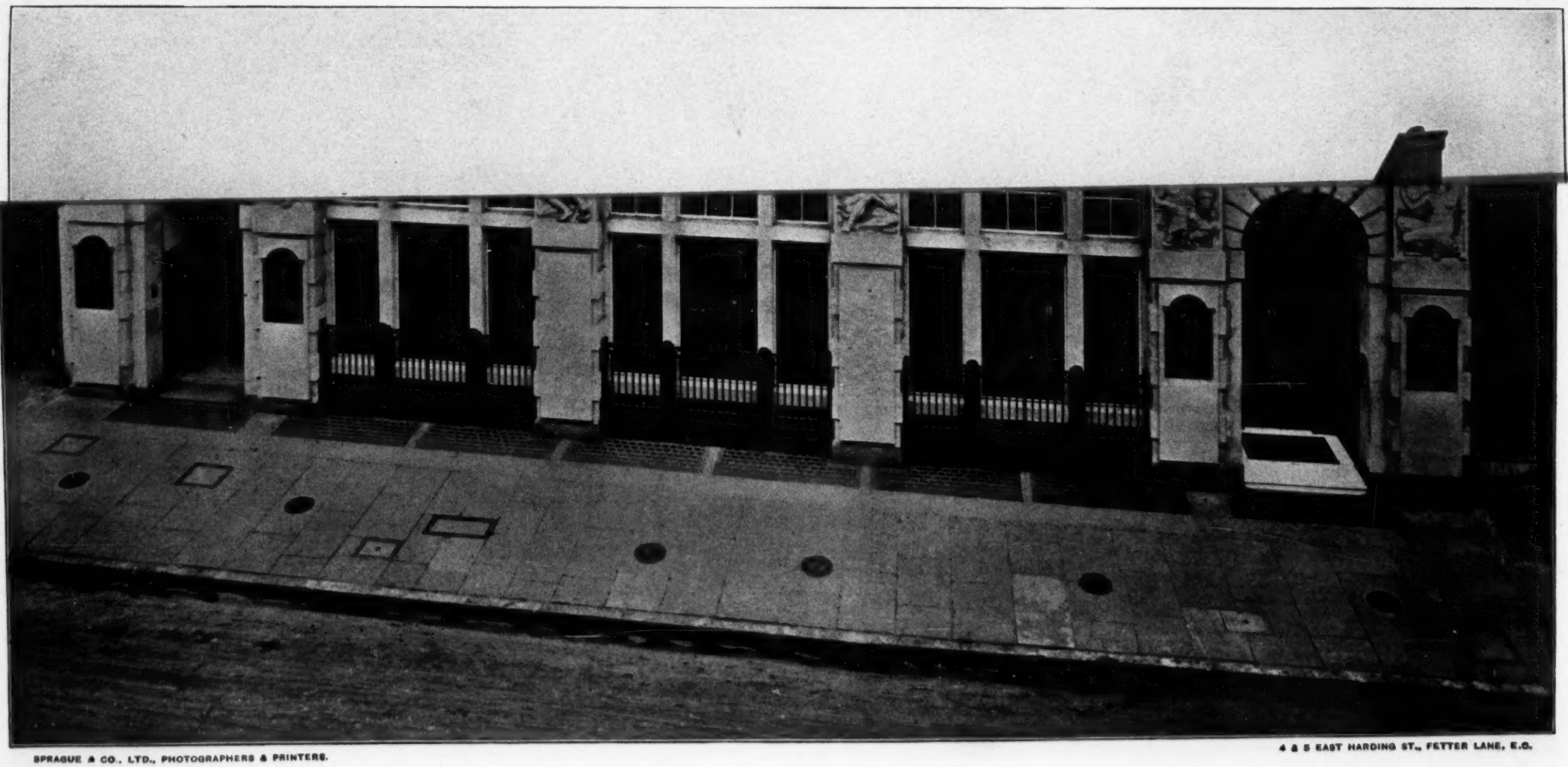
an influenced
gard to the
dscape. The
ood so as to
the mantel-

Y FROM

e name was
awing which
to say that
g was by a
Taylor.
s frame with
handler, and
of our repre-
to us with
thor, having
y applied to
both. The
o our plate to

or presenta-
the author's

ucation Com-
Council have
en to act as
for the educa-
construction, Mr.
quantity sur-
I.B.A.; and
A.S.I.



SPRAGUE & CO., LTD., PHOTOGRAPHERS & PRINTERS. 4 & 5 EAST HARDING ST., FETTER LANE, E.C.

PREMISES, HATTON GARDEN, E.C.—Messrs. Niven & Wigglesworth, Architects.

ars Ago.

NOVEMBER 13, 1858.

FOUNTAINS.

een expressed that the Pancras should have r. Gurney to erect at ain for the use of the s in the neighbourhood re can be no doubt of ountains in the great netropolis, for the use ers and animals. Con- evil condition of water els of this wide district t is not to be desired hould be supplied from the filtered and best nt companies' mains. e sum which has been r the supply of water essary for health and feared that the charge y of street fountains nd it has been said that ould be necessary for because the erection of to damage, in some of the companies. We t this will be the case; the water-starved poor courts, in the same om Gray's Inn-lane to nn-square, and draw a r, the street fountains erfere with the extent of the houses. It that provided well- lent individuals were ns in necessary places, ithout being much out t the necessary supply e during the summer ld be in great demand. of the metropolis have er of necessity, and a vel for long distances say that his "water

conduits of London, ld towns of England, rchitectural features; acteristic on the Con- ay. It is to be hoped these new works, the sculptural skill may the fountains may be ublic accommodation, ty in the streets.

have been supplied, recommendation, fifty fountains should be nd be "things of as much called for in

ations.

TON GARDEN.

oduction from one of photographs which taken for us of ples of London street

n illustrated from a ects, in our issue of en a plan and short ; but the photograph ea of the work. Vigglesworth are the

AND GALLERY.

om the intention has adth and majesty of tened of much of the rs coarse and out of ith present-day sur- the furniture of the been adopted, better

suited to the exacting ideas of some as comfort now existing. The room has been designed for a house in New York, and is to be carried out in fine mahogany, oiled but not polished; the furniture of English walnut inlaid with black and rosewood; the large decoration over the ingle is to be painted by Mr. H. D. Richter in a low rich scheme of colour.

The drawing, of which Mr. H. D. Richter is the author, was exhibited at the last Royal Academy.

ST. DEINIOL'S LIBRARY AND RESIDENCE, HAWARDEN.

THESE buildings have been erected near the old Pariah Church of St. Deiniol, on the brow of a hill commanding fine views of the Dee estuary and the Wirral peninsula.

The western portion contains the library, divided into two large rooms open to the roof and surrounded with galleries, with warden and sub-wardens' rooms, and has been built as part of the National Memorial to Mr. Gladstone. To this there has been added by the members of his family, and in furtherance of the intent of the illustrious founder of the Institution, the eastern wing, consisting of residential quarters for the permanent staff and the household servants, wherein also accommodation is provided for some seventeen visitors or students. In this wing on the ground floor there is an oratory, a dining-room, and a large and sunny common room, with bedrooms and bath-rooms on the first and second floors.

For the custody of the late statesman's many important MSS. and documents of historic interest there is a fireproof strong room on the ground floor.

Externally, the walling and dressings are of Runcorn stone throughout, and the roofs are covered with Westmorland olive-green slates.

The interior woodwork of the library, which has an open-timbered roof, is oak, and the principal rooms of the residence have been furnished in the same material.

Messrs. Parker Brothers, of Chester, were the general contractors. Messrs. Douglas & Minshull were the architects.

LANDSCAPE FOR WALL DECORATION.

THIS is a design by Mr. P. A. Wise, a student of the Royal College of Art, showing a landscape designed to fill a defined space on the wall of a room, as a permanent decoration.

The author seems to have been influenced by the "Liber Veritatis" in regard to the style and treatment of the landscape. The foreground figure is cleverly placed so as to appear to have a relation to the mantelpiece and pedestal under it.

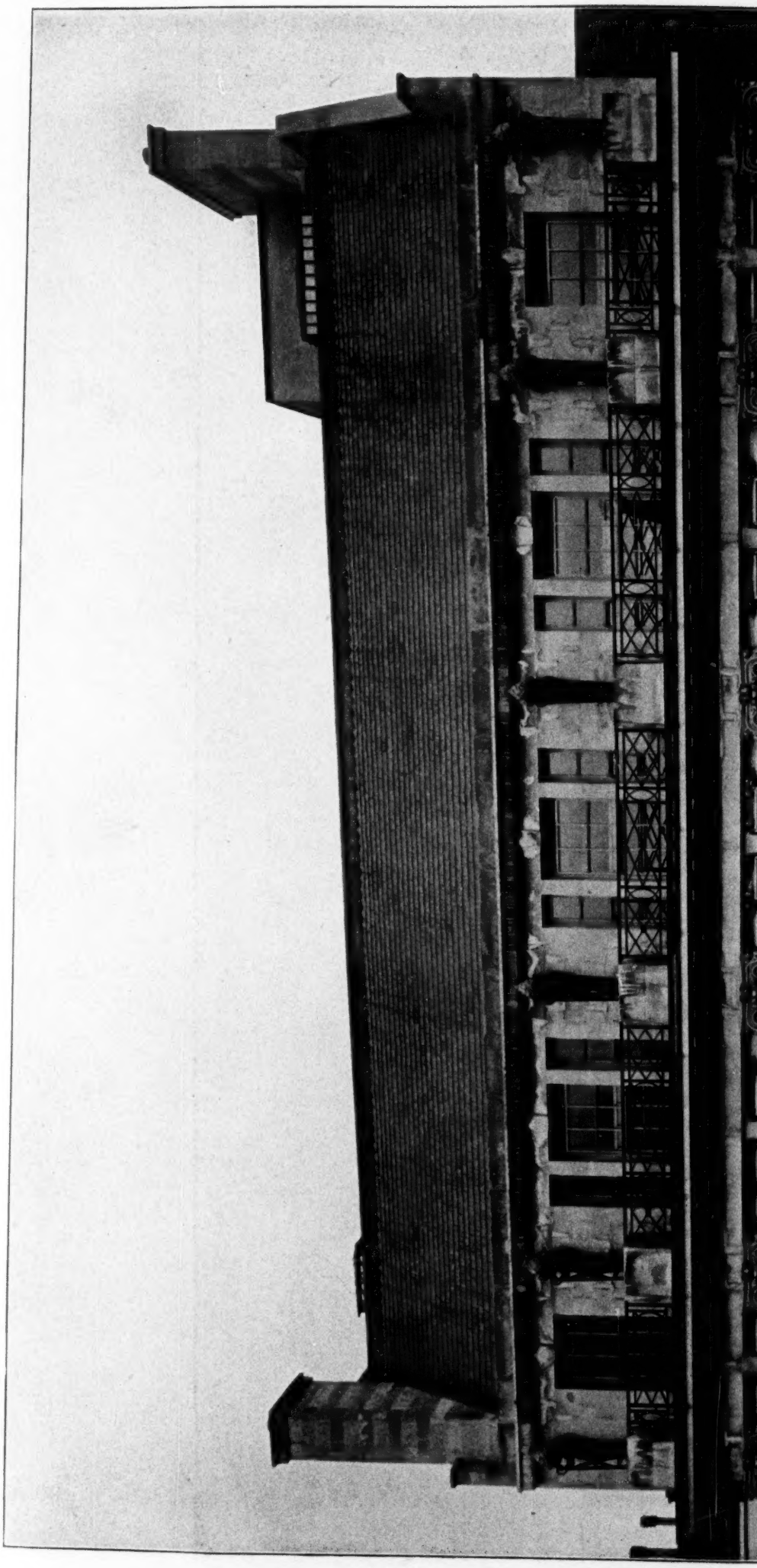
DRAWING OF DOORWAY FROM CAREY-STREET.

MR. F. W. CHANDLER, whose name was placed on the above-named drawing which we published last week, writes to say that this is a mistake; the drawing was by a fellow-student, Mr. Charles W. Taylor.

It was mounted on the same frame with a measured drawing by Mr. Chandler, and hence the mistake on the part of our representative, who sent the proof to us with Mr. Chandler's name as the author, having not noticed that his name only applied to one of the drawings and not to both. The printed name was inserted in our plate to make it more complete.

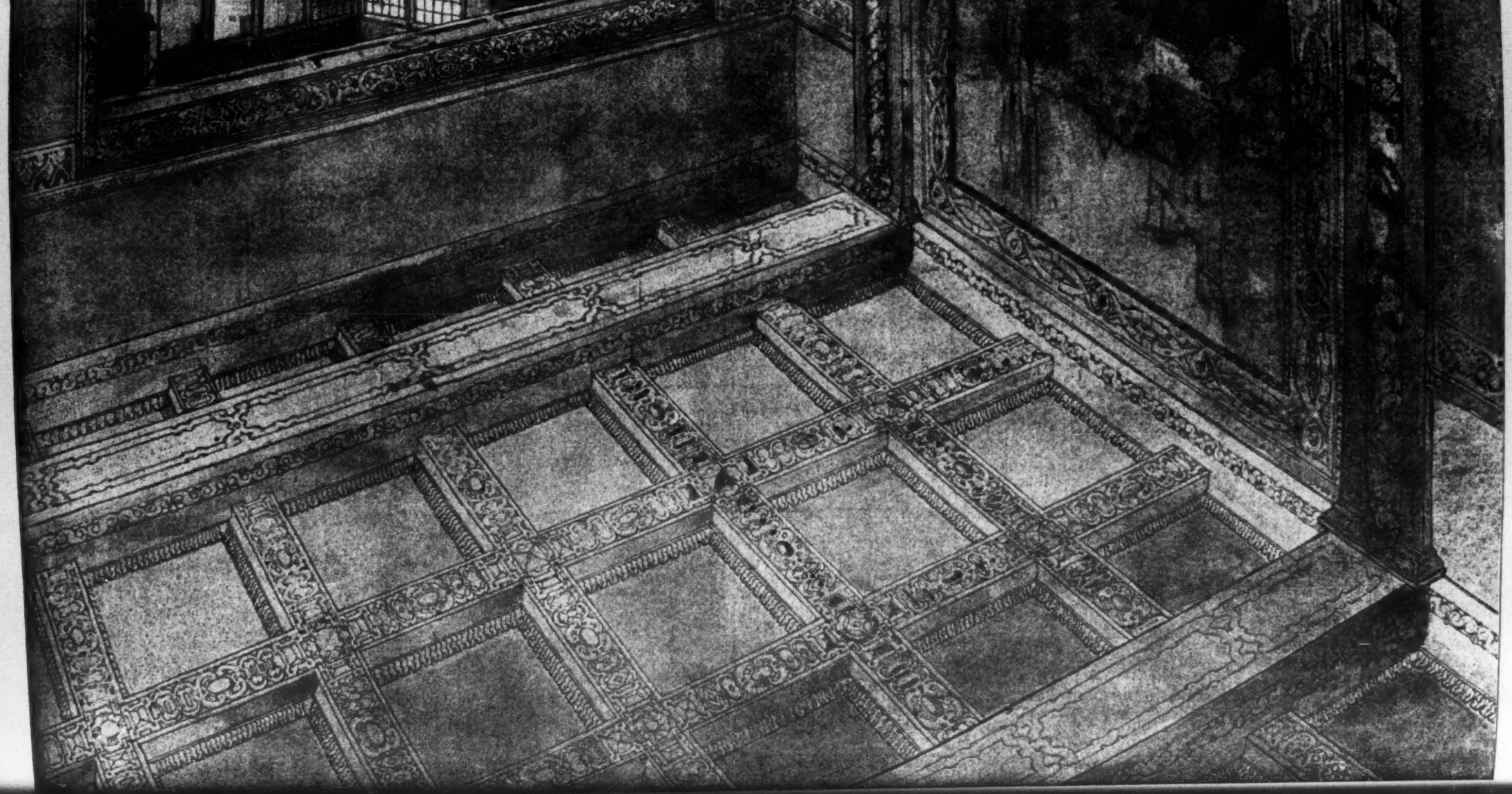
We are now sending Mr. Taylor presentation proofs of the drawing with the author's name corrected.

TECHNICAL EDUCATION.—The Education Committee of the London County Council have selected the following gentlemen to act as examiners for specified subjects for the educational year 1908-9:—Building construction, Mr. A. Randall Wells, A.R.I.B.A.; quantity surveying, Mr. Arthur Wells, F.R.I.B.A.; sanitary engineering, Mr. G. Smith, A.S.I.

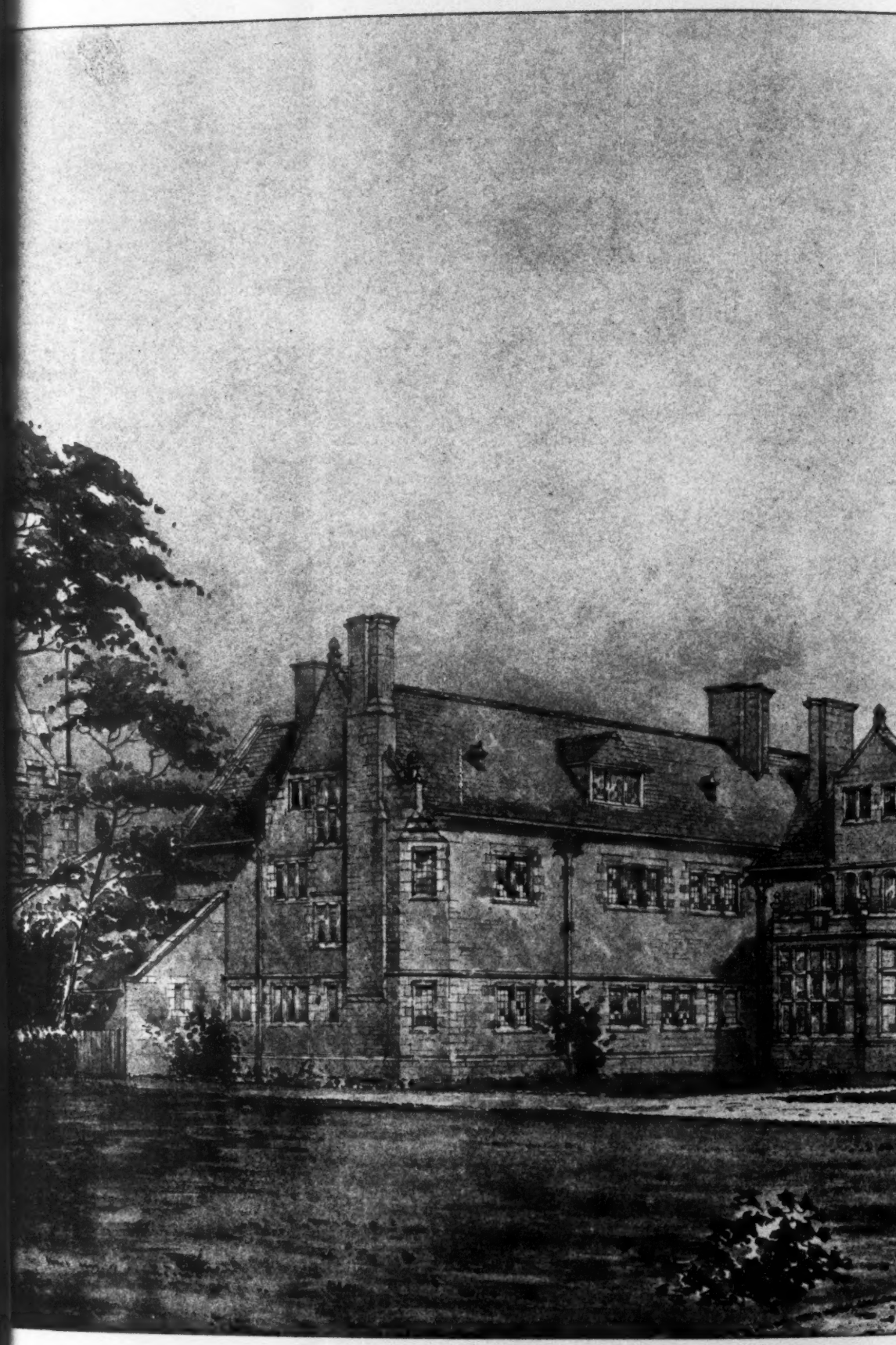


SPRAGUE & CO., LTD., PHOTOGRAPHERS & PRINTERS. 4 & 5 EAST HARDING ST., FETTER LANE, E.C.

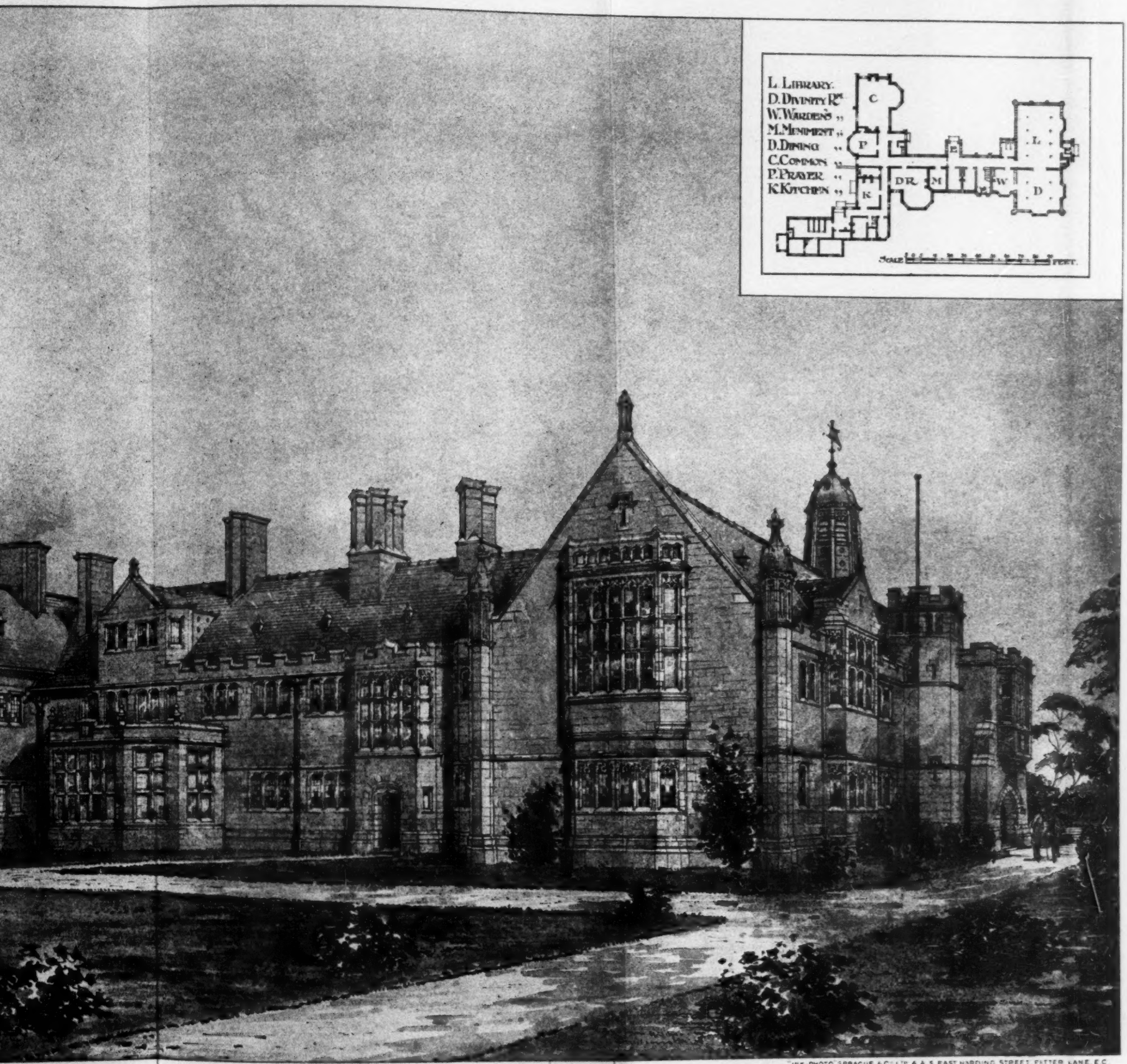
PREMISES, HATTON GARDEN, E.C.—Messrs. Niven & Wigglesworth, Architects.



INK-PHOTO SYRACUSE & CT LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



ST. DEINIOL'S LIBRARY AND RESIDENCE, HAWARDE

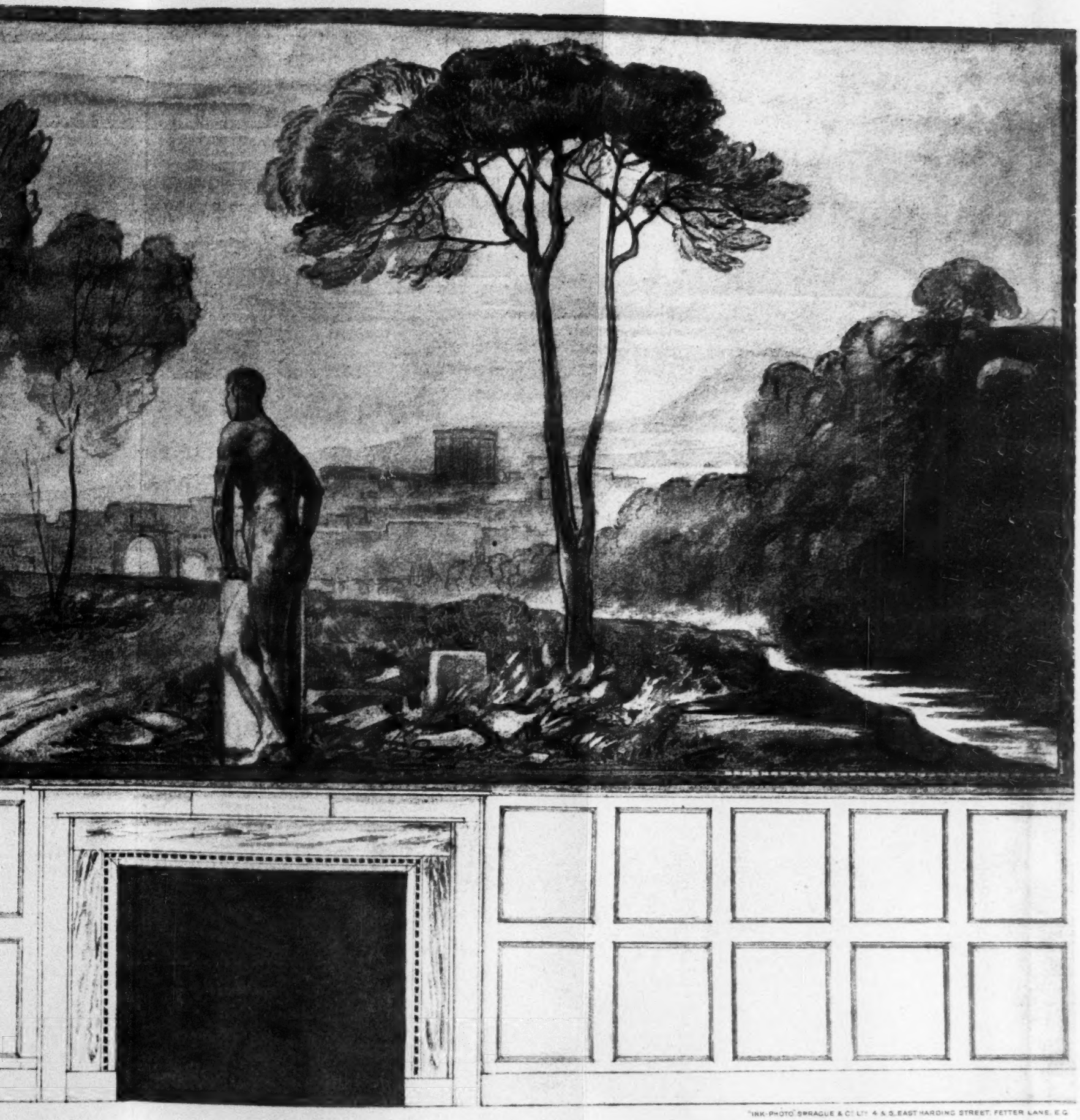


INK PHOTO. SPRAGUE & C.° L.TD 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

SIDENCE, HAWARDEN (GLADSTONE NATIONAL MEMORIAL): N.W. VIEW.—Messrs. Douglas & Minshull, Architects.

Royal College of Art, 1908.

LANDSCAPE FOR W



"INK-PHOTO" SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

LANDSCAPE FOR WALL DECORATION OF A ROOM.—By Mr. P. A. Wise.

Thi
Coun
Coun
R. A
Lod
Boro
City
law
Coun
Site
esti
amou
Finan
tion,
men
N.).
Have
prov
Sup
reco
Tha
Steel
for th
condu
be ac
Tha
Ltd.,
supp
ing f
Imp
tions
agree
Tha
under
ture
be ar
Tha
be un
Wi
Wi
Pro
and
that
danci
Kira
confir
endor
the C
An
refer
adequ
Sir
exhib
Facto
for th
ample
future
peopl
Mr.
state
for a
never
Mr.
mitte
exag
arran
did r
been
espec
tion.
for i
exhib
moda
The
Sir
condi
free
the e
Ad
Asylu
estim
15,00
respe
block
recon
the N
The
Sch
estim
263*l*.
respe
quan
struc
Scho
the e
of 80
respe
quan
the
econo
scien
Ter
Educ
tende
to 8
Scho
erect
for t

"Th
of "

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. R. A. Robinson, Chairman, presiding.

Loans.—It was agreed to lend Battersea Borough Council 10,794*l.* for paving works; City of London Guardians 12,000*l.* for poor law purposes; and Hammersmith Borough Council 10,000*l.* for electric light.

Sites.—It was agreed that the several estimates of expenditure on capital account, amounting to 14,600*l.*, submitted by the Finance Committee in respect of the acquisition, for educational purposes, of the undermentioned sites—Amberley-road (Paddington, N.), Malmesbury-road (Bow and Bromley), Haverstock-hill (St. Pancras, W.)—be approved.

Supply of Rails.—The Highways Committee recommended, and it was agreed:—

That the offer of the Frodingham Iron and Steel Company, Ltd., amounting to 13,017*l.* 5s., for the supply and delivery of slot rails and conductor tee rails for the Council's tramways be accepted.

That the offer of Bolckow, Vaughan, & Co., Ltd., amounting to 8,150*l.* 7s. 6d., for the supply and delivery of track rails and fastenings for the Council's tramways be accepted.

Improvements.—The following recommendations of the Improvements Committee were agreed to:—

That the widening of Lea Bridge-road be undertaken; and that the necessary expenditure on capital account, not exceeding 22,600*l.*, be sanctioned.

That the widening of Streatham High-road be undertaken.

Widening of Woolwich-road.

Widening of Queen's-road, Peckham.

Franco-British Exhibition.—The Theatres and Music Halls Committee recommended that the provisional licence for music and dancing granted on November 22, 1907, to Imre Kiralfy for the Franco-British Exhibition be confirmed; that notice of such confirmation be endorsed on the licence; and that the seal of the Council be affixed to such endorsement.

An amendment was moved and seconded to refer the matter back in order that more adequate sanitary accommodation be provided.

Sir John Benn said it was a scandal that the exhibition authorities, having evaded the Factory Acts, should charge their workpeople for the use of sanitary conveniences. Free and ample sanitary accommodation should in all future exhibitions be provided for the workpeople employed.

Mr. Salmon said there was no truth in the statement that the workpeople were charged for sanitary accommodation. The staff had never been charged a penny piece.

Mr. Greenwood, the Chairman of the Committee, said there had been a great deal of exaggeration in the matter of the sanitary arrangements at the exhibition, although he did not deny that the arrangements had not been as satisfactory as might have been, especially at the commencement of the exhibition. There would probably be demands made for improved accommodation in any future exhibition, and a promise of improved accommodation had been given to them.

The amendment was lost.

Sir J. Williams Benn then moved that it be a condition in granting any future licence that free sanitary accommodation be provided for the employees.

After discussion the amendment was defeated.

Additional Buildings, Manor Asylum.—The Asylums Committee recommended that the estimate of expenditure on capital account of 16,000*l.* submitted by the Finance Committee in respect of the erection and equipment of a block to accommodate 113 patients, and of the reconstruction of the administrative centre, at the Manor Asylum be approved.

The recommendation was agreed to.

School Works.—It was agreed that the estimate of expenditure on capital account of 263*l.* submitted by the Finance Committee in respect of taking out and lithographing quantities in connexion with a scheme of structural improvements at the Marner-street School (Bow and Bromley) be approved; that the estimate of expenditure on capital account of 80*l.* submitted by the Finance Committee in respect of taking out and lithographing quantities in connexion with the erection on the "Millwall" site (Poplar) of a domestic economy centre and a metal-work centre, with science-room, be approved.

Tenders for Schools, St. Pancras.—The Education Committee recommended that the tender of Messrs. J. & M. Patrick, amounting to 8,412*l.*, for enlarging the Mansfield-road School (St. Pancras N.) by 394 places, and erecting a manual training centre, on arches, for twenty boys, be accepted.*

* The full list of tenders appears under the head of "Tenders."

Mr. Dew moved as an amendment that the following words be inserted after the word "That" in line 1:—"subject to Messrs. Patrick agreeing to it being made a condition of the contract that, with a view to attracting the large number of unemployed carpenters and joiners, all the joiners' work shall be prepared at their London workshops." There were no fewer than 15 per cent. of the organised carpenters and joiners walking the streets of London at the present time. London wages were higher than those in the country, and that led to considerable competition. The Council had been deceived in the past, and had given work to firms which were really country firms having London offices.

Mr. Gosling seconded the amendment, which was rejected, and the recommendation was agreed to.

London Exhibitions Buildings.—A drawing, submitted by Mr. A. O. Collard, showing how it is proposed to arrange the Empress Hall at the London Exhibitions Buildings, Earl's Court, for use as a roller skating rink during the winter months was passed.

Works at Council Schools.—The Education Committee recommended, and it was agreed:—

That the supplemental estimates of expenditure on capital account of 4,000*l.* and 6,000*l.* submitted by the Finance Committee in respect of structural works in connexion with (i.) new Council schools and (ii.) additions and alterations to Council schools, for the financial year 1908-9, be approved.

That the supplemental estimates of expenditure on maintenance account of 5,250*l.* and 3,500*l.* submitted by the Finance Committee in respect of works in connexion with (i.) exterior painting of thirty-five Council schools and (ii.) minor improvements at sixty-six Council schools be approved.

Works at Fire-Stations.—It was agreed that the supplemental estimate of expenditure on maintenance account of 1,000*l.* submitted by the Finance Committee in respect of repairs and alterations at fire-stations be approved.

Proposed Subway for Foot Passengers under the Thames between North and South Woolwich.—The Highways Committee reported as follows:—

"The Improvements Committee have informed us that they have decided, in view of urgent representations from the Woolwich Metropolitan Borough Council and elsewhere, to recommend the Council to seek authority in the session of 1909 to construct a subway for foot passengers between North and South Woolwich, at an estimated cost of 112,000*l.*"

The Improvements Committee recommended that application be made to Parliament in the session of 1909 for authority to construct a footway tunnel under the River Thames between North and South Woolwich, and that provision be made in the Bill to amend sect. 16 of the Metropolitan Board of Works (Various Powers) Act, 1885, relative to the service of boats at Woolwich ferry, so as to enable the Council to suspend the service between the hours of 9 p.m. and 7.30 a.m.

Mr. Hayes Fisher moved that the following words be added:—"and that provision be also made in the Bill to enable the Woolwich Metropolitan Borough Council, the West Ham Corporation, and the East Ham Corporation to contribute towards the cost of the tunnel."

After discussion the amendment was withdrawn, and the recommendation was agreed to.

Subway for Foot Passengers, Blackfriars Bridge.—It was agreed that the six plans showing the proposed arrangement of the subway for foot passengers to be constructed by the City Corporation at Blackfriars Bridge, in accordance with the agreement between the Council and the Corporation entered into in pursuance of the resolution of April 10, 1906, be approved.

Tramways.—It was agreed:—

That expenditure on capital account not exceeding 25,900*l.* be sanctioned for (i.) the construction of the authorised tramways in Streatham High-road, from the existing terminus to the county boundary at Norbury; and (ii.) the reconstruction of the tramways in Woolwich-road between Tunnel-avenue and the central car-repair depôt.

That, in order to enable the Highways Committee to arrange for the trackwork referred to in the foregoing recommendation to be executed under their direction by labour specially employed for the purpose, the Committee be authorised to enter into any contract on behalf of the Council which may be necessary in connexion with the matter.

Excavating Work, Holborn to Strand.—The Improvements Committee recommended that expenditure on rate account not exceeding 1,350*l.* in respect of excavation works on the eastern portion of the crescent site between the Strand and Aldwych be sanctioned.

The Committee considered that the work would improve the letting value of the land.

Mr. Dove moved that the recommendation be referred back for further consideration. More information was required to show how much of the cost would go to the unemployed and how much in other charges. The work would cost a good deal, would do the unemployed little good, and would not improve the value of the land.

Mr. Norman seconded.

Mr. Howell J. Williams said what would expedite the letting of the land would be the granting of more reasonable terms.

The amendment was carried on a show of hands. On a division there voted: for the amendment, fifty-four; against, forty-nine.

Photographs of Site of New County Hall.—The Local Government Records and Museums Committee reported as follows:—

"On July 28-29, 1908, the Council referred back a recommendation submitted by us that a water-colour drawing of the site for the new County Hall should be obtained, with an instruction to us to consider as to procuring a suitable photograph of the site. We have considered the matter further, and, in accordance with what we understand to be the desire of the Council, we have arranged for photographs of the site to be taken from different positions, and mounted on linen for purposes of record."

Construction of Conveniences, Kennington Park.—It was agreed that the resolution of July 23, 1907, giving permission to the Lambeth Metropolitan Borough Council to construct public conveniences on the triangular detached portion of Kennington Park at the junction of Kennington Park-road with Brixton-road be rescinded.

Lack of Employment—Additional Works.—It was agreed that the Parks and Open Spaces Committee be authorised to offer works at parks and open spaces under the control of the Council to the Central (Unemployed) Body for London for execution during the ensuing winter upon the condition that the Council will make no contribution towards the cost of such works.

The Council adjourned about eight o'clock.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 TO 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Hampstead.†—Retention of one-story projecting shop in front of Nos. 152 and 154, Finchley-road, Hampstead (Mr. J. D. Hunter for Mr. A. W. Armstrong).—Consent.

Lines of Frontage and Projections.

Kensington, South.—Retention of a projecting glass and metal sign at No. 30, Fulham-road, Kensington (Messrs. J. Offord & Sons).—Consent.

Kensington, South.—Retention of a projecting shop front at No. 26, Beauchamp-place, Brompton-road, Kensington (Messrs. Martin, White, & Co.).—Consent.

Lewisham.—That the application of Messrs. H. & G. Taylor for an extension of the period within which the erection of houses with bay windows upon a site on the northern side of Belmont-hill, Lee, was required to be completed, be granted.—Consent.

Marylebone, West.—Projecting balconies in front of a building to be erected upon the site of No. 11, Lisson-grove, St. Marylebone (Mr. C. W. Ferrier for the Trustees of the Hospital for Invalid Gentlewomen).—Consent.

Norwood.—Porches and oriel windows to sixteen houses on the western side, and ten houses on the eastern side, of Doverfield-road, Brixton-hill, Norwood (Mr. H. E. Davey for Mr. J. Philpot).—Consent.

St. George, Hanover-square.—A porch in front of the superstructure to the Hyde Park-corner tube railway-station, Knightsbridge, St. George, Hanover-square (Mr. D. Joseph for Mr. F. J. Coxhead).—Consent.

St. George, Hanover-square.—A shop front at No. 105, Lupus-street, Pimlico (Messrs. Briant & Son for S. Frost & Co., Ltd.).—Consent.

Strand.—An oriel turret at the corner of a building on the south-eastern side of New Martlett's-court, Strand, abutting also upon Bow-street (Mr. W. E. Clifton for Messrs. Howard & Co.).—Consent.

Wandsworth.—That the application of Messrs. Fasnacht & Beale, for an extension of the periods within which the erection of buildings on the western side of the Streatham High-road, Streatham, northward of Guildersfield-road, was required to be commenced and completed, be granted.—Consent.

Woolwich.—A one-story shop in front of No. 27, Herbert-road, Woolwich (Mr. T. S. Nash for Mr. W. Sutch).—Consent.

Width of Way and Frontage.

Bermondsey.—Additions to Guy's Hospital to abut upon Great Maze-pond, Bermondsey (Messrs. Woodd & Ainslee for the Treasurer and Governors of Guy's Hospital).—Consent.

Bermondsey.—A vestry and porch addition in front of St. Paul's Church, Kipling-street, Bermondsey (Mr. J. M. Kennard for the Vicar and Churchwardens).—Consent.

Islington, East.—The retention of a projecting sign at No. 3, Newington Green-road, Islington (Mr. C. E. Tanner).—Consent.

Width of Way and Space at Rear.

Hackney, South.—A two-story building at the rear of No. 10, Tower-street, Hackney, to abut upon Martello-terrace (Messrs. T. Gates & Sons).—Consent.

Lines of Frontage and Construction.

City of London.—An iron and steel gangway to connect No. 10, Ducksfoot-lane with No. 15, Laurence Pountney-lane, City, over the public way of Laurence Pountney-lane (Messrs. J. D. Mathews & Son for Messrs. Slazenger & Sons).—Consent.

Hampstead.—A covered way in front of No. 24, Greville-road, Hampstead (Mr. R. W. Schultz).—Consent.

Formation of Street.

Wandsworth.—Extension of the time within which the roadway of a proposed street to lead out of the western side of Streatham High-road to Guildersfield-road, Streatham, was required to be defined and thrown open to the public as a highway (Messrs. Fasnacht & Beale).—Consent.

Working-class Dwellings.

Islington, South.—A deviation from the plans approved for the erection of working-class dwellings upon a site on the eastern side of Liverpool-road, Islington, southward of Flight's-yard (Messrs. Joseph & Smithem).—Consent.

Uniting Buildings.

Islington.—The formation of an opening on the ground floor and an opening on the first floor at the premises of the Daimler Motor Company (1904), Ltd., Highgate-hill, Highgate (the Daimler Motor Company (1904), Ltd.).—Consent.

Alteration of Building.

Strand.—That the application of Mr. W. Willett for an extension of the periods within which the erection of an additional story to No. 8, Albany Court-road, Piccadilly, was required to be commenced and completed, be granted).—Consent.

The recommendation marked † is contrary to the view of the local authority concerned.

Architectural Societies.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—In the *Journal* of the Royal Institute of British Architects for August 29 last was published a translation of the twelve resolutions relating to International Architectural Competitions, which were brought forward and approved of generally at the International Congress held at Vienna last May. At a subsequent meeting of the International Permanent Committee the British representatives (Mr. Leonard Stokes and Mr. John W. Simpson) proposed that, in order to render the resolutions really effective, the various nations adherent to the Congress be afforded an opportunity of considering and confirming them. The proposal commended itself to the Committee, and on the motion of Mr. Simpson a resolution was passed that a copy of the resolutions be sent to each section of the Permanent Committee with a request (1) to consider them in detail and return them to the Secretary-General (M. Poupinel, Paris) with any observations thereon; (2) to appoint one member of their section to meet the other delegates at Paris with full powers to discuss the resolutions and settle a final and definite report which should be held to express the views of every nation represented on the Permanent Committee. As it was particularly important that the delegate appointed to attend the meeting at Paris should be fully informed as to the views of British architects on the subject, copies of the resolutions were sent from the Institute to the Competitions Committee and to the various allied societies, with a covering letter inviting suggestions and observations on the resolutions to be sent to the Secretary of the Institute not later than September 30. The replies of the various bodies were duly received and collated by the Royal Institute of British Architects' Competitions Committee, who added their own observations and sent the whole in the form of a Report to the British Section of the Permanent Committee. At a recent meeting of this section the Report was adopted and Mr. John W. Simpson was selected, and has consented, to act as delegate to represent the views of British architects at the meeting of the International Commission to take place at Paris on November 19.

BRISTOL SOCIETY OF ARCHITECTS.—On the 9th inst., under the auspices of the Bristol Socety of Architects, Mr. F. Bligh Bond, F.R.I.B.A., read a paper at the Fine Arts Academy, on "Recent Excavations at Glastonbury Abbey." The chair was taken by Mr. Mowbray Green (Bath), President of the Society. Mr. F. Bligh Bond said that the lecture formed one of the winter courses of the Society, and they were supposed to be technical lectures, but as there were a good many present that night who were not architects his lecture would not be too technical. Proceeding, the lecturer ran briefly through the history of the buildings which have stood on the Glastonbury site. There was a Christian settlement at Glastonbury in almost, if not absolutely, Apostolic times. He need not remind them of the legend of Joseph of Arimathea, but the first church was a wattled structure, and of this Mr. Bligh Bond showed a drawing to indicate its appearance. With lantern slides and drawings he showed the buildings which succeeded this up to the XIIth century, and said that fire destroyed nearly all of those churches. Shortly after the great fire the first great scheme of building took place, and the first to rise was the beautiful St. Mary's Chapel, which was built exactly on the spot where the wattled church had been erected, and it dated from 1186. Amongst the works which the trustees were now undertaking was the reconstruction of the large arch which originally went across the east of that chapel. The great church was commenced shortly afterwards, about 1189, and was completed in 1303. Having shown pictures of details of these buildings, Mr. Bligh Bond gave some of the results of his excavations. He said that plans of the abbey which had been found were conflicting, and most people were inclined to accept Professor Willis's theories that there were five chapels in a row terminating the choir, and this he had been able to establish. He showed the sketch of the outlines of St. Edgar's Chapel, which had been previously referred to as a chapter house in the inventory in "Warner's Glastonbury," and said the difference in the length represented the addition which was made by Abbot Whiting to Abbot Bere's work. During the excavations in other parts of the Abbey evidence had been found of the existence of Western towers to the Abbey Church, and amongst other objects found were a skeleton with the head in a freestone ring of a man about 6 ft. 3 in. in height, a Celtic cross and a medallion, which, in his opinion, bore the date 1105. The Bishop of Bristol moved a vote of thanks to Mr. Bligh Bond, which was seconded by Mr. Hudd, and heartily carried.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—The general meeting was held on the 5th inst., Mr. P. Robinson, President, in the chair. The Report of the Council shows that the total membership on April 30, 1908, was 166, namely, 33 honorary members, 69 members, and 64 associates, as against a membership of 169 last year. The School of Architecture, under the auspices of the Society, in conjunction with the Leeds Institute and the Leeds University, is proving of great advantage to the associates in preparing them in the subjects required for the Royal Institute of British Architects' examinations. During the year the catalogue of the Society's library has been revised and published, along with the architectural books in the public library. During the Session the Council nominated a deputation consisting of the President (Mr. H. S. Chorley) and Mr. B. Kitson, to wait upon the Educational Committee of the West Riding, and point out to them the advisability of drawing up their conditions for architectural competitions for schools on the lines as issued by the Royal Institute of British Architects. They suggested with regard to the number of assessors that their case called for special consideration, in that they are under dual control—that of the local authority and the West Riding County Council. They suggested three assessors: County Architect, Secretary of Higher Education, and a third to be appointed by the local authority, or as an alternative by the competitors.

Legal Column.

BUILDING LINE AND THE TRIBUNAL OF APPEAL.

A DIVISIONAL Court has recently considered the decision of the Tribunal of Appeal given in the case of Fleming and others *v.* London County Council. The report of the hearing before the Tribunal will be found in the *Builder*, June 15, 1907; the appeal to the Divisional Court is reported in the *Builder* November 7 last. The question involved, as will be seen from these reports, was one of some complexity and importance, but it may be shortly stated as follows:—An application was made under sect. 22 of the London Building Act, 1894, to have the building line defined in a certain section of the south side of Euston-road between Mabledon-place and Duke's-road, a length of frontage of 420 ft. The main line of buildings in that section were buildings erected before 1862, but at the time they were erected there were open spaces or forecourts extending to the pavement line. The street was constructed under a local or personal Act, 7 Geo. 4, sect. 140 of which provided that no house except upon old foundations should be erected within 50 ft. of the centre of the road. This section was repealed by the Metropolis Management Amendment Act, 1862, sect. 75 of which enacted that no building should be erected beyond the general building line without the consent in writing of the Metropolitan Board of Works. Certain one-story shops and one two-story shop had been erected on these forecourts, and as to some of them consent had been given on specified dates, but as to others there was no evidence as to the date of erection or of any consent. Roughly speaking, out of the 420 ft. of frontage consents could be traced as to buildings occupying 110 ft., 171 ft. were occupied by buildings uncertificated, and 139 ft. was vacant land. The Superintending Architect certified the building line as the line of the main buildings. The Tribunal of Appeal took into consideration the other buildings save one temporary structure, and one building as to which it was proved consent had been refused, and made the building line practically the pavement line. The Divisional Court affirmed the decision of the Tribunal of Appeal, but not without some hesitation. Very similar considerations were raised in arguing the case Lilley & Skinner *v.* London County Council, but the decision of the Divisional Court in that case turned upon the simple point that a certificate of the Superintending Architect once having been given and no appeal having been lodged against it, it remained binding, as no alteration in the street had since been made.

RIGHTS OF WAY.

Sect. 26 of the Local Government Act, 1894, placed an arduous duty on the District Councils by imposing upon them the duty of protecting public rights of way and preventing their obstruction where, in the

opinion of the Council, such obstruction would be prejudicial to the interests of the district. No subject is more fruitful of litigation, and where such litigation is embarked upon and proves abortive the ratepayers resent the consequent inflation of the rates, and as a consequence sometimes rights of way become lost, as the Councils hesitate to embark on a course which may lead them to the House of Lords. In our notice of the Public Rights of Way Bill (the *Builder*, June 6 last), which has been read a second time in the House of Commons, we drew attention to this question and especially noticed the difficult questions involved where estates were settled for lives, and the recent case of Farquhar *v.* Newbury Rural District Council aptly illustrates the observations we then made. The defendant Council asserted that a certain road in the villages of Shaw and Donnington was one which the public had the right to use; the plaintiff asserted that the right was limited to a user of the lane as a churchway. Before 1735 there was a churchway running in a slightly different direction. At that date the estates on which the churchway and the road in dispute are situated were placed in settlement, and in 1836 a Dr. Penrose was tenant for life and a Mr. Eyre was remainderman in fee tail, the former not residing on the estate, and the latter managing the property. In 1842 Eyre laid out the road in question and acquiesced in its user by the public, but it was not proved that the life tenant, Dr. Penrose, had any knowledge of this user. The Court of Appeal, affirming the Court below, held that the tenant for life and the tenant in fee could dedicate the road to the public, and seeing that the remainderman had laid out the road more than sixty years ago, and had paid for it, that the Court ought to presume that this was done with the concurrence of the life tenant, and that the long user showed it had been dedicated as a highway, and not merely as a church path.

The object of the Bill before Parliament is to simplify the proof of dedication or user.

Workmen's Compensation.

The House of Lords, in the case of Reid *v.* Great Western Railway Company, have given a decision of some importance upon the Workmen's Compensation Act as to whether an accident arose "out of and in the course of" the employment. This question has occupied the Courts for over ten years, and yet some uncertainty exists as to the meaning of these words. In the case in question an engine-driver had stopped his engine for water on the up line. The water column was between the up line and a siding, and beyond the siding was the down line. Having left his engine to turn on the water, the engine-driver saw a man on a goods' train on the down line, from whom, for purposes of his own, he went to get a book, and whilst returning to his engine he was knocked down by some trucks on the siding, sustaining injuries from which he died. The County Court Judge awarded compensation to his dependants, but the Court of Appeal reversed this judgment, and the House of Lords have affirmed the Court of Appeal, holding that the accident happened whilst the man was about his own business, he having, as it were, quitted his employment for the moment.

In one of the first cases decided under the Workmen's Compensation Act, Smith *v.* Lancashire and Yorkshire Railway Company (1899), it was decided that the words "out of and in the course of" the employment were used conjunctively, and that the accident must arise both "out of and in the course of" the employment. This was reiterated in the very recent case, Fitzgerald *v.* Clarke (1908), in which it was explained that the words "out of" denote the origin or cause of the accident, whilst the words "in the course of" relate to the time, place, and circumstances of the accident. For an accident to arise "out of" the employment it must result from a risk reasonably incident to the employment. Some of the decided cases seem to confuse the point, because the Courts at one time in their anxiety to administer "rustic justice" under this Act treated all questions as matters of fact, and on this ground refused to disturb the findings of arbitrators, and they also interpreted the sections very widely. This has been to a great extent the cause of the excessive litigation under these Acts, and it is satisfactory to find that now stricter principles are being applied, the Acts are becoming better understood, and litigation is diminishing. The two decisions above referred to should enable persons to arrive at a correct conclusion as to whether the accident occurred out of and in the course of the employment, although the matter is somewhat complicated by the question whether the contract of employment covers the time of the accident. On this latter point we cited cases showing the principles to be applied in our Notes, November 2, 1907.

Water for Domestic Purposes.

The Courts have again had to consider what constitutes a supply of water for domestic purposes in the recent case, Frederick *v.* the Bognor Water Company. The plaintiff kept a school in a house which had been a dwelling-house, but which had been converted by his predecessor into a school for some forty resident boarders. There was also a laundry used for the purposes of the school, but detached from the house. The plaintiff contended that he was entitled to a supply of water to the house, stables, and laundry at the rate charged for "domestic purposes." The defendants relied on sect. 61 of the Bognor Water Act, 1891, which provides that the company shall not be compelled to supply water to any dwelling-house otherwise than by agreement when any part of such dwelling-house is used for any trade, manufacture, or business for which water is required.

The plaintiff admitted that he was using the house as a place of business, that point having been decided in the case of the Barnard Castle Urban District Council *v.* Wilson (see our Notes, the *Builder*, July 26, 1902). The defendants on their part admitted that the purposes for which the water was to be used were "domestic purposes." On this point the case of South West Suburban Water Company *v.* St. Marylebone Union, the *Builder* Notes, July 18, 1904, can be referred to. But the question for the Court was whether, under the provisions of sect. 61 referred to above, the company were not entitled to charge a special rate, and the Judge came to the conclusion that the business carried on at the premises was not one "for which water is required," *i.e.*, that the test is not the character of the house, but the purpose for which the water is used. In coming to this conclusion the Court was assisted by a case, Chester Waterworks Company *v.* Chester Union, decided on an Act nearly in identical terms with that under consideration; but many of the reported cases turn on the Waterworks Clauses Acts, 1847, and 1863, and sect. 12 of the latter Act contains some definition of what is a supply for "domestic purposes." It does not include a supply for cattle or horses or for washing carriages when such horses or carriages are kept for sale or hire, or by a common carrier, or a supply for any trade manufacture or business, or for watering gardens or for fountains or for any ornamental purposes. These statutes appear, however, to have been construed on the same principle as that applied in this case; the object for which the water is required is the matter to be regarded; thus in Barnard Castle Urban Council *v.* Wilson the Court of Appeal held that the swimming-bath in that case was used in the school for educational purposes, and therefore that the supply of water was for the business.

The Trades Disputes Act.

The Court of Appeal in the case of Smithies *v.* the National Association of Operative Plasterers and others, the facts of which will be found in our Notes, June 20, have decided that the Trades Disputes Act, 1906, sect. 4 of which provides that "an action against a trade union or against any members or officials thereof on behalf of themselves and all other members of the trade union in respect of any tortious act alleged to have been committed by or on behalf of the trade union, shall not be entertained by any Court," is not retrospective, and therefore that the Courts are not precluded from entertaining an action which has been instituted before the date when this Act became law, viz., December 21, 1906.

Competitions.

Blackpool Central Library Competition.—We have received the following circular letter from the Town Clerk of Blackpool, which has probably been sent to all the competitors, but as a copy is addressed to us we conclude that it is intended for publication. Omitting the formal headings, etc., it runs thus:—

"I am instructed by the Council of this Borough to inform you that Mr. H. D. Searles-Wood has, with the concurrence of the Corporation, retired from the professional assessorship in connexion with the designs for the Blackpool New Central Library, and that the Council will appoint another assessor after the designs have been received by the Council.

I am also instructed to inform you that the Council at their meeting yesterday have altered the particulars, instructions, and conditions of competition for designs herein so as to provide that in the event of Mr. Carnegie disapproving a design selected by the assessor, the competitor or competitors sending in such design shall have an opportunity of submitting a further design to meet the wishes of Mr. Carnegie; and also to provide for designs of unsuccessful competitors being returned to such competitors.

The particulars and conditions must therefore be read as varied accordingly."

We presume that the alterations made in the conditions are in consequence of the action of the Institute of Architects in recommending its members not to compete; but if we remember right there were other points that were objected to besides those referred to. Probably it is on this ground that Mr. Searles-Wood has declined to act.

New Church, Buxton.—At a meeting on Saturday evening of the Building Committee of the Harpur Hill new church, it was found that the design placed first was by Mr. Charles Swain, 12, Exchange-street, Manchester, and College-road, Buxton.

Guildhall, Londonderry, Competition.—The Ulster Society of Architects have addressed the following letter to the Corporation of Londonderry in reference to the Instructions to Architects for a competition for the rebuilding of the Guildhall at Londonderry. We have not space to print the Instructions referred to, but the nature of the objections to them (in which we entirely concur) may be gathered from the terms of the letter:—

Ulster Society of Architects.
Londonderry Branch.
Commercial-buildings,
Foyle-street, Londonderry.
October 31, 1908.

To the Corporation of Londonderry.

Gentlemen,—We, the undersigned members of the Ulster Society of Architects practising in Londonderry, having had under consideration the "Instructions to Architects" relating to the competition for the rebuilding of the Guildhall, would respectfully ask that you reconsider and amend the following clauses in the Instructions in the following particulars, viz.:—

(1) That a lithographed print of the ground-floor and first-floor plans of the existing buildings be issued to each competitor.

(2) That the time for delivery of plans be made two months from date of issue of revised conditions.

(3) That clause with regard to the prizes should be amended to read as follows:—100*l.* for first prize, 60*l.* for second prize, and 40*l.* for third prize, and that the remuneration should be 5 per cent. on the outlay instead of 4 per cent.

(4) That the question of quantities should not be allowed to enter into the competition, nor be included in the architect's fees.

(5) The name of the referee should be given.

(6) An approximate estimate should be arrived at by cubing, stating the price per cube foot, and not by an approximate schedule of quantities; and should accompany the competitive plans.

We would respectfully suggest that the above alterations be made in the conditions so as to allow us to compete.

R. ECCLES BUCHANAN.
JOHN M. ROBINSON.
T. JOHNSTON.
M. A. ROBINSON.
JAMES V. JOHNSTON.
J. M. C. KNOX.
R. H. NOLAN.
JAMES REID.
EDWARD J. TOYE.
JAS. P. MCGRATH.

Trade Catalogues.

MESSRS. MEASURES BROTHERS send us their book of structural steelwork and castings—a well-bound volume of nearly 400 pages. Dimensions, weights, and safe loads are given for joists, girders, lattice girders, and steel-plate girders. Ample particulars of steel columns and stanchions, bases and caps for columns and stanchions, column and girder connexions, and flitched beams will be found in succeeding pages, after which information and illustrations are presented concerning angles, channels, and tees, stock patterns of cast-iron and steel brackets, iron and steel roofs—including domes—fire-resisting doors, steel flooring, cast-iron columns, window sashes, manhole frames and covers, cellar flaps, cisterns and pipes, staircases, gates and railings, gratings, corrugated sheeting, steel chimneys, iron buildings, light bridges, heating apparatus, grinding and mixing mills, cranes, and other appliances. From this brief summary it will be seen that the handbook is of very comprehensive character and much utility.

Messrs. Pickerings, of Stockton-on-Tees, send us their new catalogue of pulley blocks, lifts, cranes, and hoisting machinery, forming a book of 118 pages. Pickering's, Sant's, Moore's, and Weston's pulley blocks of various types first receive attention, then come illustrated descriptions of travelling pulley blocks and trolleys, which are valuable aids in warehouses, factories, and other places where materials and goods have to be hoisted and transported for moderate distances; winches and hoists driven by hand, belt, and electricity form an appropriate introduction to pages where lifts of all kinds are illustrated, together with auxiliary machinery and fittings, and the catalogue concludes with particulars of cranes and some other specialties. One or two noteworthy examples of dinner lifts deserve mention, and so also do the invalid and hospital lifts illustrated. Passenger and goods lifts are well represented, and the notice of goods lift users may be directed to the particularly business-like series of views showing types of freight cars made by this firm. The catalogue is a good illustration of the improvements made during recent years in the design and construction of lifts and hoists.

The Acetylene Corporation of Great Britain, Ltd., has sent us a catalogue of apparatus for the generation of acetylene, and a separate catalogue showing a large number of acetylene fittings in the form of wall brackets, ceiling pendants, and floor and table standards. Acetylene flarelights and portable lamps are illustrated and described in a third catalogue. The cost of a complete acetylene installation for a country house is regulated by local circumstances and by the quality of the fittings selected by the purchaser. For an installation of thirty lights the cost has been in one case as low as 50*l.*, and in another as high as 200*l.* For 100 lights the cost of an installation has been as low as 120*l.*, and as high as 600*l.* The Acetylene Corporation urges its customers to use only carbide of good quality, such as may be purchased from the Corporation itself. It asserts that Great Britain is the dumping-ground for most of the inferior carbide made on the Continent, and warns purchasers of carbide against the use of this low-grade material.

BOOKS RECEIVED.

STRENGTH OF MATERIALS. By Arthur Morley, M.Sc. (Longmans, Green, & Co. 7*s.* 6*d.*)

PUBLICATIONS OF THE THORESBY SOCIETY. 1907. Vol. XVI.

AN OLD YORK CHURCH — ALL-HALLOWS. Depicted by Mabel Leaf and E. Ridsdale Tate. Edited by the Rev. P. J. Shaw, Rector. (The Church Shop, York. 30*s.*)

MANUAL OF BUILDING INSPECTION. By W. R. Purchase. (Crosby Lockwood & Co.)

Correspondence.

A BRITISH "VILLA MEDICI."

SIR,—That the Royal Institute has shaken off its time-long habit of detached dilettantism and, with the influx of fresh blood to its body, taken on a vigorous activity with regard to the concerns of the profession, has long been apparent; but the ready haste it now displays in the development of new ideas must cause many a grey beard to wag in disconcerted doubt. It was but in 1906 that the International Congress met in London, and 1908 sees us with a fire-new Charter and By-laws; a Town Planning Committee is in full work, and sacrilegious hands are laid upon the Ark of Examinations, which is thought to need a refit.

All these and other things were spoken of on Monday last in the delightful presidential address of Mr. Ernest George—one of the best, I think, we have had from the Chair; but perhaps the most striking instance he gave of the assimilation and lively growth of any suggestion tending to advance our art, was contained in his mention of a proposed School in Rome. It was but in February of last year, when moving a vote of thanks to Mr. Collcutt for his address to students, that I pointed out the great benefit it would be to our students if they were placed under training and discipline during their tenure of travelling studentships, instead of roaming on a sort of "Tour in Search of the Picturesque"; and urged the need for a British "Villa Medici." Not long afterwards I had the pleasure of learning that, through the kind thought of a friend whose work in connexion with the Royal Institute entitles him to the gratitude and high respect that he enjoys, a valuable legacy had been promised for the object I had at heart. The spirited action of the Council in obtaining the loan of M. Hulot's Prix de Rome drawings was another step in the desired direction; the *Builder* has steadily directed public attention to the valuable qualities of the French Classic training, and now we have the project for a British School brought forward and blessed from the Presidential Chair.

Well, the President has thrust the iron into the fire, Sir Aston Webb has struck a very useful blow by his encouragement and promise of support, and it remains for us to hammer while the metal is hot, and to forge an efficient instrument. May I be allowed to suggest a few points for consideration?

1st. I would urge that the beginning be a very modest one. To attempt at the outset the establishment of a full-blown Villa Medici of architects, painters, sculptors, and musicians would mean long delay, great cost, and the co-ordination of many interests; possibly involving the loss of the scheme. It is sometimes forgotten that the actual money value of the Prix de Rome is only some 130*l.* per annum (this includes travelling expenses), to which is added a small supplementary grant for travelling when visiting Greece or Asia Minor. I am not without hope that the Royal Institute, with its allied societies and the Association, may soon be able to make a beginning (possibly by some small modifications of the conditions of their studentships) with a small house in Rome, a Director and a few students in architecture only. Later on, the Royal Academy and other educational authorities may wish to develop the School and give their help, but the important point is that a start should be made. Government support we cannot, I fear, expect, though Sir Aston Webb has indicated a practical way in which such support might be given, in connexion with the new Royal Commission on Ancient Monuments.

2nd. We should, I think, put our pride in our pocket and take our Directors from the Ecole des Beaux-Arts for the first few years—until, in fact, we have trained our own professors. It is of the utmost importance that the tradition of the School should be founded on Classic methods, and we need not waste time in developing for ourselves what has been already achieved by a school boasting a line of architect students, which begins with Dorisct, in 1720, and is broken only by the suppression of the Academies during the Revolutionary years 1794-5-6. No student of music or singing limits his choice of a professor to his fellow-countrymen, but places himself under the teacher, whether French, Italian, German, or what-not, whose methods and experience seem to promise the best results.

3rd. The execution of a "Restoration" during the term of studentship should be insisted on. It may not be, probably is not, in the case of our students, desirable that they should carry their "restorations" to the point attained by the French, who are assured of Government employment at the end of their term at Rome. The time required is more than our students, who have to form a private practice, could afford. But the reasoned study and comparative analysis required to restore an ancient monument without artistic and anachronistic blunders, give such a thorough acquaintance with, and appreciation of, the refinements of Classic work as can, I am assured, be obtained in no other way. The sense of picturesque form and colour is developed among our architects to a high degree, thanks to the influence of that great master, Norman Shaw. If upon that Romantic stock be grafted the accurately delicate beauty of the Classic, I believe our national architecture may well become the finest of modern times.

JOHN W. SIMPSON.

ARCHITECTURAL PUPILS: A LIMIT WANTED.

SIR,—It is admitted on all hands that the architectural profession is overcrowded. I assume one reason is that some principals take an excessive number of pupils for the sake of the premiums they secure thereby. Think of one architect taking six pupils and a neighbouring architect in the next street being satisfied with one only; this is an anomaly which ought not to exist. I believe the rule of the Law Society, and followed by solicitors, is that one pupil only is to be articled to any member of a firm. I would commend this subject to the Royal Institute of British Architects, and suggest that it should make a rule of limit, so that Fellows and Associates of the Royal Institute of British Architects may not take more than one pupil at the same time. W. A. H.

*** Our correspondent, though he does not wish to give his name, occupies a position in the profession which gives weight to his opinion. We shall be glad to have the opinions of others on this important subject.—ED.

THE VENTILATION OF THE HOUSE OF COMMONS.

SIR,—May I remark on your leaderette with regard to the ventilation of the House of Commons that, although on certain days the air before being admitted into the House is purified, the ventilation arrangements are such that all the air admitted into the House passes through a grating in the floor, over which hundreds of members daily walk, bringing with them from the streets matter which prevents the air breathed by the members from being as pure as it might be? So long as this system prevails, it is quite impossible that the air can be properly purified, even by running the fans at full speed. PHILIP MAGNUS.

*** We have always been of opinion that the introduction of air through the floor was an unfortunate expedient, for the reason referred to above; it has the merit, however, of spreading the incoming current and avoiding concentrated draughts; and those who condemn it should state what other method they propose. At the meeting-room of the Institution of Civil Engineers fresh air is

admitted through the risers of the seats; this gets over the objection to the House of Commons method, but it produces a draught round the feet of the audience which some people find unpleasant. We do not understand what Sir Philip Magnus means by saying that the air is purified "on certain days" before admission to the House. When last we examined the ventilation and machinery under the House there were certainly permanent screens for washing and filtering the air, which acted continuously.—ED.

SELECTION OF DISTRICT SURVEYORS.

SIR,—I was astonished at the first letter on this subject, but cannot agree with the approval bestowed on the method by Mr. Griffiths. The examination of the Royal Institute of British Architects proves that the candidates have knowledge of the theory of construction, the uses and nature of materials, and building law, so that the additional examination by those who have not passed the statutory examination cannot be of much use.

The late Metropolitan Board of Works always elected practical men who had been ten or fifteen years in actual practice as architects and surveyors, knowing that such men were better officials than those who had simply been in a large official office or clerks to District Surveyors. Any capable man can get up the Building Act or any amendment in a very short time.

According to the Report on Fees for 1907, the salary system, had it been passed, would have cost the ratepayers many thousands.

EXPERIENCE.

*** We were always in favour of the old system of appointing architects or surveyors of long experience in practice, as District Surveyors, leaving their private practice undisturbed; and think it was a mistake to have departed from it. On the other hand, we consider that "payment by results," as it may be called, was a bad system, putting the surveyor in an invidious position, as a person whose interest it was to find fault. A fixed annual payment for undertaking the responsibilities of the office would have been better. —ED.

SIR,—Mr. H. Griffiths can have very little experience of Selection Committees or he would not so naively ask the question, "For what other purposes could candidates be required to attend?" I will endeavour to enlighten him.

The Committee is constituted to advise the Council as to the most suitable candidate applying for the position, and since all candidates are equal in technical knowledge, having passed the qualifying examinations, it remains for the Committee to ascertain who is the most capable, and who has had the most practical experience.

I therefore suggest that instead of a Selection Committee asking a candidate the tensile and compressive strengths of 1 in. of concrete, they should ask questions similar to the following:—

What experience have you had as an architect and surveyor?

Have you designed and supervised the erection of any buildings in London? If so, when and of what character?

Have you had any experience of dangerous structures? If so, when and where? etc.

Several other questions of a similar character occur to me, but I think the above sufficient.

Of course, I know such questions would act adversely to the younger and inexperienced candidates; but in the course of time these candidates would by practice acquire the necessary practical knowledge and experience.

A CANDIDATE.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS' NEW PREMISES.

SIR,—Sir Aston Webb's speech on the President's address to members on Monday last week was noteworthy and pregnant with common sense. To obtain a new building during the new President's (Mr. Ernest George's) term of office would be a great achievement. The present conditions are getting to be intolerable; and what other professional body would consent to the library and reading-room being closed every time a general, business, or special meeting was convened, or even when the committees had to sit? Surely at this period of depressed land values some good site could be obtained! The accommodation for the staff is meagre, and the work of the Institute, as well as the pleasure the building should afford, is woefully restricted.

The first thing to do is to find a site, suitable in most essentials, if not in every particular; and should the site be north, east, south, or west of London is the question. The west is the wealthy quarter, and the expensive quarter; the south, by reason of the erection of the new County Hall on that side of the river, is assuming a municipal character, and has the Houses of Parliament as a near neighbour; but few architects are county councillors or M.P.'s. In the east, provided it is the far east, well beyond the Bank of England, land could be acquired at a cheap rate, though if the new building should be readily accessible from the great railway termini, none of these quarters are ideal. Perhaps a central position would be the best position, and it would be fairer to the general body of its members if the Institute settled in Central London. The British Museum is in a convenient part, and is there no site near it where the Royal Institute of British Architects could be housed? University College is already interested in architecture, and these buildings might be in proximity to the new home. Something should be done to support Sir Aston's suggestion, and no doubt the President and Hon. Secretary will soon suggest a site. The rest will follow.

BALBUS-THE-LESSER.

November, 1908.

MAGNESITE PLASTER.

SIR,—I should be grateful if any of your readers can give me details as to the uses of this material, where it can be obtained, and how it is applied to stone, brick, and wood work.

It has the credit of making a plaster of immense durability for outside walls and for interior decoration and flooring. It also, I believe, carries a polish hard and bright like white marble. There were some beautiful panels of this plaster, in various tints, made, I understood, from lightly calcined magnesite in the Madras Museum some half-dozen years ago.

LANDLORD.

Master Builders' Associations, etc.

BIRMINGHAM MASTER BUILDERS' ASSOCIATION.

THE annual meeting of the Birmingham Master Builders' Association was held at the Grand Hotel on Tuesday, Mr. F. G. Whittall presiding.

The Committee, in presenting the annual report, regretted that they had to record that the building trade during the year had been in a very depressed state, and that there is at present no sign of a revival. The question of serving notices on the operatives for the alteration of working rules had been seriously considered, and the Committee decided to serve the following notices of alterations on all trades with the object of obtaining the long-wished-for uniformity of working hours:—"To alter the ordinary hours of work in all trades from the present times to 6.30 a.m. to 5 p.m. in the summer, and to 8 a.m. to 4.30 p.m. in the winter, the men during the short time to have breakfast before commencing work, and to have half an hour only for dinner. The short time to run from the second Monday in November to the second Saturday in February inclusive. Overtime in all trades to commence after 5.30 p.m. in the shops, and after 6 p.m. on the job." The Committee also decided to serve the following notices on the masons:—"To omit the words 'fixers, 10½d. per hour' from Rule 3." The whole question of serving notices for a general reduction of wages was fully discussed, and although reduction was justified by the stagnant state of trade, it was decided not to reduce wages in the hope that the operatives would recognise the friendly spirit in which the notices were given to secure alterations which it was believed would be generally advantageous. A deputation attended on February 13 at the offices of the Liverpool Master Builders' Association, and met several prominent members of that body to consider the question of the inter-trading rule and the method of working in Liverpool. The deputation recommended that the inter-trading rule as in force in Liverpool be adopted in Birmingham, that a telephone card in similar form to that in use in Liverpool be also adopted in Birmingham, and that the term "kindred associations" in the Liverpool rules shall mean the associations federated to the National Federation. A general meeting of the trade in April last approved of the inter-trading rule as in force in Liverpool. The balance-sheet showed that the total ordinary receipts for the year were 199*l.* 15s. 8d., which, with the balance from last year, made a total of 423*l.* 12s. 8d. The disbursements amounted to 397*l.* 12s. 1d., and the balance to the credit of the Association was 26*l.* 0s. 7d. The report was adopted on the motion of the President, seconded by Mr. R. Bulley.

On the motion of Mr. J. B. White, Mr. F. G. Whittall was re-elected President of the Association for the fourth year in succession.

The President, acknowledging his re-election, referred to the notices given to the operatives, and said that he thought there would be no difficulty when they came to conciliation in getting the alteration of rules approved.

Mr. J. J. Moffat was re-elected Vice-President, Mr. George Twigg was reappointed Treasurer, and Mr. Ernest J. Bigwood was re-elected Secretary. The Committee were also re-elected, and the Auditors (Messrs. J. S. Surman and Ralph Webb) were reappointed.

The President, in accordance with the recommendations already approved at a special meeting, moved that the following addition be made to the rules of the Association:—"Members shall not give or take tenders for any work to or from any persons who are not members of this or kindred associations connected with the building trade, and shall not employ such persons to do work for them. The term kindred associations shall mean associations federated to the National Federation. The trade members be requested, wherever possible in dealing with merchants or firms of a like nature, to give preference to honorary members of this Association. That a similar telephone card to the one in use in Liverpool be adopted by this Association."

Mr. Albert Smith seconded the proposition, and after some discussion it was carried by nine votes to seven.

On the motion of Colonel Barnsley, the Committee were instructed to revise the rules generally and submit them to a general meeting for approval.

Mr. F. G. Whittall presided at the annual dinner which followed the business meeting. Those present included the Lord Mayor of Birmingham (Councillor G. H. Kenrick), Mr. C. H. Barnsley (President National Federation of Building Trade Employers), Lieut.-Colonel John Barnsley, Messrs. A. G. White (Secretary National Federation), W. Westance (President Midland Federation), F. W. Amphlett (Secretary Midland Federation), J. L. Ball (President, Birmingham Architectural Association), E. J. Bigwood (Secretary Birmingham Association), and the Presidents of the West Bromwich, Walsall, and Stourbridge Associations.

The Lord Mayor, in proposing "Success to the Birmingham Builders' Association and the Trade of the City," said that bad as the trade was at present he thought the signs of improvement were beginning to be visible. The building of dwelling-houses, at any rate, showed symptoms of revival, but although that branch was likely to revive they would have to exercise a great deal of patience before they saw a revival of factory building. The great public buildings were, however, always going on, and those who were connected with public affairs were now making an effort, so that more work might be done in those times when work was normally less than in times when prices are phenomenally high. Then he would point to the fact that they lived in a city where the custom of ninety-nine years' leases were prevalent. Those leases were beginning to drop in pretty freely.

The President of the Association responded to the toast. The other toasts honoured during the evening included "The Architects and Surveyors," proposed by Lieut.-Colonel Barnsley, and acknowledged by Mr. J. L. Ball and Mr. Anthony Rowse, and "Kindred Associations," to which Mr. C. H. Barnsley and Mr. A. G. White responded.

INSTITUTE PREMISES, GARNDIFFAITH, MON.—The foundation-stone was recently laid of a reading-room and institute which is being erected at Garndiffaith. The building contract has been secured by Messrs. Bailey Brothers, Pontnewynydd, at about 1,800*l.*, and the architect is Mr. W. Beddoe Rees, of Cardiff.

PROPOSED EXTENSION OF THE TOWN HALL, SHEFFIELD.—It is stated that the extension of the Sheffield Town Hall will have to be carried out in the near future, the present building being quite inadequate. The Improvement Committee of the Council have taken the matter in hand, and the City Architect has been instructed to report upon the schemes for the extension of the municipal buildings, and upon the plans prepared by the late Mr. E. W. Mountford.

LONDON BOROUGH COUNCILS.

Battersea.—Queen's-road is to be paved with hard wood at an estimated cost of 8,900*l.*, and application is to be made to the London County Council for sanction for a loan of 8,772*l.* for paving with wood Lavender-hill and St. John's-hill between the kerbs and the new tramway margins. The London County Council have intimated that they are prepared to sanction a loan of 10,794*l.*, the estimated cost of paving Clapham Common, north side, with hard wood. In respect to a suggestion from the Borough Council as to the insertion of clauses in a General Powers Bill for the removal from the operation of the London Building Act, 1894, of electric service-boxes placed in the public way by metropolitan electric lighting authorities, the London County Council have replied that they are of opinion the matter is one to be considered when the question of the general amendment of the London Building Act is being dealt with rather than in connexion with a General Powers Bill.

Chelsea.—An extensive building scheme, involving the proposed erection of 683 tenements and fifty-three lock-up shops, at an estimated cost of 150,000*l.*, has been brought before the Council by Mr. E. C. P. Monson, architect, on behalf of the Trustees of the Sutton Estate. Mr. Monson approaches the local authority for permission to close Marlborough-square, Eborall-place, Little College-street, and a portion of Marlborough-street in connexion with the project, and the proposed opening of a new street from Marlborough-street to Leader-street. In the course of his letter the architect points out that the roads which he suggests ought to be closed are narrow thoroughfares, and the abolition of these squalid places cannot do aught but benefit the borough generally. The number of buildings at present on the site is 157. It is proposed to close approximately 3,467 sq. yds. of existing public highways and form a new street which would contain an area of 591 sq. yds., and in addition 631 sq. yds. would be surrendered for widening the streets surrounding the area to be dealt with. The Works Committee, in a report issued this week, point out that in dealing with the closing of existing streets and the formation of new ones, the Council are put to considerable expense in carrying out the necessary alterations to sewers and drains. They further point out that the closing of the streets in question will greatly enhance the value of the property which the Sutton Trustees are acquiring. Mr. Monson, in his letter, asked that the matter be settled as quickly as possible so as that work might be commenced on the site for the benefit of the unemployed. The Committee has decided to recommend the Council not to offer any opposition to the proposals named on condition that the Trustees defray all costs and expenses incurred in connexion with obtaining the requisite order, and they also pay to the Council in respect of the area of public highways proposed to be closed a sum per superficial foot equivalent *pro rata* to that which they are paying for the other portion of the estate after deducting the area of any land given up for forming new streets or widening existing roadways. As an alternative to the second condition the Committee put forward the suggestion that the Trustees construct a new street, 40 ft. in width, running in a direct line from Blenheim-street to Marlborough-square, and that such square be left open as a public highway as at present, and that the Trustees do further make the proposed new street to lead from Marlborough-street to Leader-street 40 ft. in width. On a report from Mr. Higgens, the Borough Surveyor, stating that he had inspected the work of Reeves' patent ventilators and found same to be satisfactory, the London County Council is to be asked to erect one of these ventilators over the sewer ventilator in Lots-road, near the pumping-station. The Borough Surveyor reports that on October 27, during a heavy rainstorm, two sewer ventilator covers blew off in Lower Sloan-street to a considerable height, and left two openings to the sewer unprotected. Street orderlies stood by them until the London County Council men took charge. This is by no means the first time that iron covers have blown off this sewer, and the matter, in Mr. Higgens's opinion, is one of very great importance. Without the least warning, heavy iron coverings, which are of sufficient weight to crush any person upon whom they fell, are shot into the air and leave a square opening into a deep sewer unprotected. This sewer is not properly ventilated. The open gratings which were meant to ventilate it are complained of, and the London County Council to stop complaints put a zinc sheet underneath to keep down the smell. In consequence of this the air in the sewer gets compressed during storms to such an extent that it throws out the gratings in this dangerous manner. The attention of the London County Council is to be called to the matter, and they are to be urged to take immediate steps to prevent any of the covers of their sewers being blown off in future.

Fulham.—The Fulham Borough Council, having instructed the various committees to consider what work could be advantageously carried out in the near future, will make application to the Central (Unemployed) Body for a contribution towards the cost of the following works:—Removal of the fruit trees and of two paths at the new cemetery, 237*l.*; pointing outside walls of town hall, old building, 418*l.*; pointing walls of superintendent's lodge, mess-room, and two chapels at old cemetery, 113*l.*; pointing the boundary wall of the cemetery from Munster-road, 110*l.*; painting of park railings, etc., 370*l.*

Hampstead.—The Borough Council have suggested to the London County Council the advisability of concreting the bottom of the bathing pond on the lower Heath as a means of providing work for the unemployed. The consideration of converting 100 incandescent street gas lamps to electrical metallic filament lamps has been adjourned.

Holborn.—The Trustees for St. Martin-in-the-Fields Almshouses and Pensions Charity claim 1,100*l.* for land proposed to be taken by the Borough Council at the corner of High Holborn and Drury-lane for the purpose of street widenings. Messrs. Thurgood & Martin are to be employed by the Council as valuers to advise as to the amount of a sealed offer to be made. With respect to the London County Council's proposal to apply to Parliament for powers to extend the tramways from the present terminus in Farringdon-road to Charterhouse-street, a poll has been taken by the Borough Council of rated occupiers in premises in the part of Farringdon-road in question; thirty-one favoured the proposal, fifteen opposed, and six were neutral. Premises were empty or no replies were received in fifteen cases. Having regard to the weight of opinion in favour of the proposal, and the growing demand for increased facilities of this kind, the Works Committee recommend the Council to consent to the project. The work of redecorating and the alteration of fittings of the High Holborn Library are to be carried out by direct labour for 434*l.*

Islington.—Theberton-street and portions of Shepperton-road, Tollington-road, Brecknock-road, and York-road are to be paved with wood at an estimated cost of 11,389*l.*, the Central (Unemployed) Body having agreed to defray the cost of labour, amounting to 2,500*l.* Progress is being made with the negotiations in reference to the proposed construction of a convenience in Finsbury Park, the cost of which is to be defrayed by Islington and Stoke Newington Borough Councils. Electric mains are to be laid in four streets at an estimated cost of 315*l.* Subject to a grant of 500*l.* being obtained, levelling work, etc., at the cemetery is to be done by the unemployed at a cost of 1,056*l.*; sewage reconstruction is to be carried out in Seven Sisters-road at an estimated cost of 713*l.*

Kensington.—The Borough Council recently sent a circular letter to the other borough councils asking their support in urging the London County Council to insert in a General Powers Bill a clause giving the borough councils power to incur reasonable expenditure in respect of the attendance of members and officials at electrical and other technical conferences having a bearing upon the performance of their duties. Of the twenty-eight metropolitan borough councils, ten signified being in favour of the proposal, six intimated that they were against the proposal, ten decided to take no action, while two had not passed any resolution on the matter. These facts were communicated to the London County Council by the Kensington Borough Council, and the hope was expressed that as only six of the councils were adverse to the proposition the Spring-garden authority would see their way to insert the suggested provision in their General Powers Bill of next session. In reply the Clerk to the London County Council has written stating that his Parliamentary Committee regret that in the absence of any general desire on the part of the metropolitan borough councils for the legislation in question, the Committee could take no action to promote same.

Marylebone.—A sub-committee has been appointed to go into the question of lighting, by electricity, all the streets in which electric mains are laid. The report of the Consulting Engineer states that the lighting in the thoroughfares in question could be carried out electrically for 8,650*l.* for the first ten years, as against 8,818*l.*, the cost of the present gas lighting, while after ten years the charge for electricity will only be about 8,130*l.* The Electricity Committee point out that the work, which will have to be executed by March next, would necessitate the employment of a large number of men whose wages would amount to about 4,000*l.* Certain alterations are soon to be made at the Aybrook-street substation, and the cost of labour in carrying out this work will be about 2,000*l.* Large extensions to the distributing system are to be put in hand in connexion with the extensive demands for lighting and power supply from Messrs. Selfridge & Co. for their new premises in Oxford-street. The estimated cost of the works involved in this connexion will be 3,000*l.*

HOUSING AND TOWN PLANNING BILL.

STANDING Committee B of the House of Commons, which is inquiring into the Housing and Town Planning Bill of the President of the Local Government Board, resumed on Thursday of last week, Sir Francis Channing presiding.

On clause 44, which prescribes the machinery for applying the Housing Acts to Scotland, the Lord Advocate said that the conditions in Scotland in regard to housing were very peculiar, largely owing to the large number of tenement houses. According to the official statistics over two millions of people in Scotland resided in single rooms. The Government realised that the position was a very serious one, and the time was very rapidly approaching, if, indeed, it had not already arrived, when both the staffing and the *personnel* of the Local Government Board in Scotland would have to be increased to deal with the additional work which this Bill would throw upon it.

The clause was added to the Bill.

Part II. of the Bill, which deals with town planning, was then proceeded with. Clause 45 allows the Local Government Board to authorise a local authority to prepare a town planning scheme on being satisfied that there is a *primâ facie* case.

Mr. Wedgwood moved an amendment to make it compulsory upon local authorities to prepare town planning schemes. He admitted that it was rather a large order, but as the Bill stood at present it was too much in the air.

Mr. Burns said he wished to state plainly that the Government could not accept the amendment. The hon. member asked that on January 2, 1909, the day after the Bill would come into law if passed, every local authority throughout the country should forthwith prepare a town planning scheme, and forthwith put into operation the conditions embodied in the Bill. In his judgment such a policy would be a great blunder and an irreparable mistake. It would lead to a vast amount of waste, and would practically destroy all chance of town planning for the next ten or fifteen years. In utilising these new powers they ought to pursue the line of the least resistance, as it was very desirable that no town planning schemes should be adopted without every consideration by the local authorities.

The amendment was withdrawn.

Considerable discussion ensued on an amendment by Mr. Munro Ferguson to provide that the local authority should take the initiative in town planning schemes.

Mr. Masterman, in resisting the amendment, said that the Government had purposely left out the local authority because they believed that, as a general rule, these schemes would be promoted by the local authority in consultation with the experts of the Local Government Board.

Mr. Guinness asked how far local authorities would be responsible for schemes—would they carry them out themselves, or merely supervise them?

Mr. Burns said they must make the local authority primarily responsible for the supervision of plans and the adoption of schemes after consultation with the various interests, and the pecuniary cost must also primarily rest upon them. They did not wish to say, however, that no town planning scheme should be promoted unless by a local authority. He could conceive a condition of things where a local authority had made up its mind to prepare a town planning scheme and concurrently the owner of adjoining land or an adjacent local authority had prepared a more comprehensive and superior scheme for precisely the same area. It seemed to him monstrous that a small town, say, of 10,000 persons should be able to rule out the wider and better scheme.

Mr. Ferguson said the real point was that, under the clause as drafted, a local authority, before it could put pen to paper, would have to go cap in hand to the Local Government Board. He considered that altogether wrong; they ought to be able to initiate town planning schemes themselves.

Mr. Vivian, speaking against the amendment, said that if it were carried it would

preclude outside bodies, such as that responsible for the Garden City at Letchworth, from promoting such schemes.

The amendment was lost.

Mr. Morrell moved to amend the clause in order to provide that all building land in an area not yet built upon should be brought into a town planning scheme.

Mr. Masterman appealed to the Committee to reject the amendment, which he said would very much limit the scope of the Bill. The words offered in the clause were the widest that the Government could possibly offer.

The amendment was withdrawn.

Mr. Dickinson next moved an amendment to enable a town planning scheme to include land "whether vacant or built upon." He said he had put down the amendment in order to ascertain what the real meaning of the Bill was with regard to land in the interior of existing towns. If the Bill was to be of any real service, it was very important that land which had buildings upon it should not be excluded.

Mr. Burns said that, in order to meet the views of the right hon. gentleman, he was prepared later on to move to add words to the clause to the effect that where it was made to appear to the Local Government Board that a piece of land already built upon was so situated in respect of any land likely to be used for building purposes that it ought to be included in a town planning scheme, the Board might authorise the preparation of a scheme including such land. The Government agreed that it would be very undesirable that a town planning scheme should be barred in its ultimate effect because the local authority or the landowner had not got power to go over the road and pull down a few insanitary cottages.

Mr. Dickinson said his amendment carried them a great deal further than the President of the Local Government Board seemed willing to go, and therefore he must press his amendment. He wanted town planning schemes to include not only prairie land, but to be applicable to existing towns.

Mr. Burns: You really mean reconstruction schemes in the centre of towns.

Mr. Dickinson: Quite so.

Mr. Burns: That is hardly the point we are dealing with now in this town planning scheme.

Mr. Dickinson said that, although he could see that the Bill as it stood would be of value to those towns that contained a considerable amount of unbuilt-upon land, it would give no assistance at all to towns that were practically filled up. There was no place which required town planning more than London, but unless his amendment was agreed to the Bill would be of no practical benefit to the metropolis or to large places like Manchester and Liverpool.

Mr. Burns contended that everything Mr. Dickinson wished for could be done under the existing law, and he instanced what had been done by Lord Cadogan in Chelsea. That borough, he said, had been completely revolutionised during the last forty years as regarded its streets and its buildings, and the work of improvement was still going on.

The Committee then adjourned.

On the resumption of the Committee on Tuesday the further consideration of Mr. Dickinson's amendment was proceeded with. The hon. member maintained that unless his amendment was carried the Bill would not be a town planning measure at all. Under the existing Acts, which the present Bill did not touch, where rebuilding schemes took place, the narrow streets remained as they were—the only improvement was that buildings were heightened. As a result, instead of relieving congestion in large towns, it was greatly added to. If the demolition of buildings was necessary to carry out a town planning scheme which involved loss upon the landowner, he would suggest that they should be compensated out of the local funds. The President of the Local Government Board had referred to what Lord Cadogan had done at Chelsea, but that was entirely a voluntary act, and he submitted that if the land in Chelsea had been in the hands of anyone less interested in the general welfare of London than Lord Cadogan, it was very improbable that the parish would be in the condition it was at the present day.

Mr. Lyttelton said he hoped the Government would strongly resist the amendment. He said that as one who was a well-wisher to town planning, and in his opinion this part of the Bill was already very much overloaded. At present experts on town planning were very few and far between in this country, and he was afraid that the whole aim of the Bill would be discredited if they set up local authorities in opposition to private owners.

Sir J. Dickson Poynder remarked that, while to a certain extent he sympathised with the amendment, he realised that this part of the Bill was already overloaded, and if in addition they were to embody this proposal, he did not think there was the slightest chance of its passing this year. It was impossible to have the centre of large towns planned in the same æsthetic manner as in the outskirts.

Mr. Wedgwood, in supporting the amendment, said it was positively ridiculous to lay down the lines on which all new houses should be built in the suburbs, and not at the same time to lay down that the narrow alley which gave access to that land should, when it was reconstructed, be made of a decent width.

Mr. Burns said that if they were to accept the amendment they must regard the Bill as absolutely lost, not only for this session, but for next. As originally drafted, the Bill was intended to enable the Housing of the Working Classes Acts to be reasonably amended, and at the same time to give to growing towns and expanding suburbs an opportunity of consciously ordering their growth and development. In taking on that they had to deal with as much as they could reasonably expect to get through this session. The amendment, if carried, would transpose the Bill from a town planning measure to a Bill for the reconstruction of London, and would necessitate a series of clauses to amend the Building Acts and the Public Health Acts.

On a division the amendment was defeated by 24 votes to 14.

Sir J. Dickson Poynder moved to omit all words in clause 1 after "land." He said he considered it inadvisable to put any limitation on the powers of the Local Government Board in regard to what land they should deal with for a town planning scheme.

The Chairman said he must rule the amendment out of order, because if it was carried it would enable the Local Government Board to do what the Committee had just decided it would not do—demolish existing buildings.

Lord R. Cecil moved an amendment to insert words making it plain that in a general way land covered with buildings was not to be scheduled in a town planning scheme. He said his object was to make it quite clear that the Bill did not apply to towns.

Mr. Masterman said the Government could not accept the amendment. On the whole he believed the Committee realised that Part II. of the Bill did not deal with the interior conditions of towns; they objected, however, to having the words inserted "not covered with buildings"—the term was altogether too ambiguous and doubtful.

The amendment was rejected on a division by 36 votes to 6.

Mr. Dickinson moved to insert words to the effect that a town planning scheme should include "the construction and use of the buildings to be erected thereon."

Lord Morpeth, in opposing the amendment, said the hon. member wished to add a new branch to municipal trading by employing public architects for the designing of houses. In his opinion it would be disastrous to buildings in this country if a town council or even the London County Council were to have the designing of all houses in the future.

Mr. Burns also opposed the amendment, and appealed to the Committee not to lay down hard-and-fast rules regarding the construction and use of buildings to be erected in connexion with a town planning scheme. He thought that the time had arrived when the Local Government Board and the local authorities were willing to adapt themselves to the variations that now existed in regard to building methods.

The amendment was, after some further discussion, withdrawn.

Mr. Harwood-Banner moved to add words to the clause giving owners power to prepare town planning schemes with reference to their own land, either alone or in conjunction with others. He said he moved his amendment in order that it might be made perfectly plain that it was not necessary to apply to the Local Government Board for authority to make a scheme.

Mr. Burns said that, supposing the Hampstead Garden City wanted to make an addition to their city, they would be saved, under the Bill, the trouble of promoting a private Bill—they would go to the local authority and ask it to promote a town planning scheme for the projected area. The local authority might possibly say that the scheme was not required. The Society would then appeal to the Local Government Board, and it would be within the competence of that Department after inquiry to see that the local authority either carried out a scheme of its own, or concurred with the scheme put forward by the owner. Short of arresting a local authority, he did not see how the Government could give any association wider powers than those to carry out schemes of their own.

Mr. Vivian, as one greatly interested in the Hampstead Garden City, declared that what they wanted was freedom for these town planning schemes, to move forward even if the local authority was not inclined to move. They would be better off if they had to promote private Bills for the purpose, as at present, rather than be compelled to submit their schemes to the local authority.

Mr. Burns promised to add words to clause 51 to give the Local Government Board power to override the decision of the local authority if they unreasonably withheld their consent to any scheme.

Lord Robert Cecil moved the adjournment of the Committee in order that they might know definitely how far the Government were prepared to meet the point under discussion. It was a matter of the greatest importance to know the exact powers that private owners would have under the Bill in taking the initiative in town planning schemes.

The Committee adjourned.

WAGES IN THE BUILDING TRADE, VIENNA.

WHEN, in 1906, the great building crisis came to an end, a scale of wages was drawn up by contractors and workmen's delegates which was to hold good till March, 1909. At the same time it was decided that before the end of the present year negotiations should be opened for considering the terms of a fresh agreement. Last month the delegates of both sides met in order to consider the demands of the workmen concerning the conditions of work. These negotiations reveal the fact that the workmen are making such demands as the contractors, in view of the unfavourable condition of the building trade, are unable to concede. The requirements of the workmen, drawn up in a memorandum, are as follows:—The working day, which up to 1906 numbered ten hours and in that year was reduced to nine and a half, shall be further reduced to nine hours. The wages demanded by separate trades are shown in the following table (10 hellers=1 penny):—

—	Hellers per Hour.			
	Till 1906.	Now.	1909.	1910.
Masons	40	54	61	63
Scaffolders.....	35	40	46	50
Helpers	28	32	38	41
Women	20	25	30	32

The workmen further demand longer hours of rest on Sundays and festivals, and earlier closing on the eve of festivals, with a full day's wage therefor. It is especially required that should no work be done on a holiday, 50 per cent. of the wage shall be paid, and that should work be done the full wage for a nine-hour day be paid, although work shall cease an hour earlier, the contractors to decide whether work is to be done on a holiday or not. Up till now the workman decided how many hours' overtime he would put in. Up till 1906 the usual rate of wages obtained for overtime. Then it was raised 10 per cent.; now the workmen demand an increase of 25 per cent. For night work the rate of pay was arranged between contractor and men, and on an average was 50 per cent. higher than the ordinary wage; now an increase of 100 per cent. is demanded. Finally, the workmen again demand the recognition of the confidential advisers of their association, a demand which was refused in 1906. This was the one point maintained by the employers of labour, who were obliged to yield to all the other conditions laid down by the men at the close of the lock-out. The delegates of the employers of labour pointed out at the meeting that they are unable to acquiesce in these requirements.

The condition of the building trade is highly unsatisfactory, less on account of the dearness of money, which this year has been reduced, than on account of the greater cost of building, which is explained by the rise in wages and increased expense of materials. As a result builders can hardly obtain a higher rate of interest on their buildings than is yielded by mortgages. Of late years the price of building has risen 15 per cent.; should the requirements of the workmen be conceded, the price will rise a further 5 per cent. This it appears impossible to contemplate, for it could only be met by a rise in rents, and this rise could not take place considering there is no scarcity of house-room. The delegates of both sides expressed a wish to settle the difference amicably. Should, however, the workmen persist in their demands, a peaceful issue does not seem probable. There is imminent danger that the next building year, on which great hopes had been placed on account of the last two

years' stagnation, will be unsatisfactory, for should the price of building rise still higher private enterprise will be checked for lack of profitable returns.

PROPOSED NEW BUILDINGS IN LONDON AND SUBURBS.

THE following is supplemental to the list of building applications to the London County Council in another column:—

Five houses in Chalcraft-road, Lewisham. Messrs. W. J. Scudamore & Sons, builders, 13, Manor-lane, Lee, S.E.

Nineteen houses in Muirkirk-road, Lewisham. Messrs. Norfolk & Prior, architects, 4, Station-buildings, Catford Hill, S.E.

Additional workshop at St. James-road (Upper Tooting) branch Workhouse. Mr. F. W. Piper, Clerk to the Wandsworth Guardians, St. John's Hill, S.W.

Six hundred and eighty-three tenements and fifty-three lock-up shops (150,000*l.*), near Marlborough-square, Chelsea, for Trustees of Sutton Estate. Mr. E. C. P. Monson, architect, 182, High-street, Acton.

Additions to 40, Chatham-place, Hackney. Messrs. Hodson & Whitehead, architects, 7, Finsbury-square, E.C.

Additions to Homœpathic Hospital, Queen's-square and Great Ormond-street, W.C. Mr. E. T. Hall, architect, 54, Bedford-square, W.C.

Formation of two streets, 40 ft. wide, between Spring-hill and Craven-walk, Hackney. British Land Company, Ltd., 25, Moorgate-street, E.C.

Six houses in Culmstock-street and two houses in Culmstock-road, Battersea, for Mr. A. Playle.

Two two-story factories, Hackney. Messrs. Hodson & Whitehead, architects, 7, Finsbury-square, E.C.

Addition to warehouse, Hackney. Mr. N. Fortescue, contractor, 215, Mare-street, Hackney.

Sixty-five houses, Ellesmere and Aberdeen roads, Willesden. Mr. J. C. Hill, builder, 55, Glenmore-road, Hampstead, N.W.

St. Gabriel's Parish Hall, Chichele-road, Willesden Green, for the Trustees.

Proposed additions to District Council's Isolation Hospital, Willesden (architect not yet appointed). Mr. W. J. J. Stewart, Medical Superintendent.

Carshalton.—Four houses, Wales-avenue, for Mr. E. J. Tinniswood.

Yeading (Uxbridge).—Re-erection of main block and wards of small-pox hospital. Mr. J. S. Brown, builder, Hillingdon Heath.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Metropolitan Asylums Board on Saturday, letters were received from the Local Government Board agreeing to the Managers obtaining the furniture required for the Southern Hospital by getting prices from selected firms instead of advertising for tenders; and also making certain suggestions with a view to reducing the cost of the entrance lodge proposed to be erected at Millfield.

Gore Farm Hospital.—The Engineer was instructed to arrange for certain repairs to the Gore Farm Hospital at a cost of 130*l.*

Children's Infirmary.—The action of the Works Committee in instructing Messrs. Treadwell & Martin to prepare plans and specifications and to supervise the work in the provision of joinery fittings at the Children's Infirmary, at the rate of 5 per cent. on the cost of the works, was approved.

METROPOLITAN WATER BOARD.

AT the fortnightly meeting of the Metropolitan Water Board held on Friday last week the following matters were dealt with:—

Rates.—The Finance Committee reported on the question of rates payable by owners, and stated that, under sect. 26 of the Charges Act, it was provided that where a house or building or part of a house or building supplied with water was let to monthly or weekly tenants, or tenants holding for any other period less than a quarter of a year, the owner instead of the occupier shall, if the Board so determine, pay the rate for the supply. It was agreed that the section should be made applicable to those premises which are let at rents which include the water rate.

Supply to Surbiton.—In connexion with the steps which have been taken to improve the supply of water in the Surbiton district, the Works Committee recommended the laying of mains in certain roads in Surbiton, Kingston, and Ham. The total estimated cost of laying the pipes and making the connexions amounts to 4,790*l.*—Approved.

Supply to Southgate.—The Works Committee recommended that owing to the rapid development of the Palmer's Green and Winchmore Hill districts (the population of which has more than doubled during the last six years), there should be a further extension of the 12-in. main, at an estimated cost of 2,850*l.*—Agreed.

Dulwich Supply.—It was further agreed to expend 850*l.* in laying a distributing main through Dulwich village.

Obituary.

M. HÉBERT.—Another of the eminent French artists represented at the Franco-British Exhibition, M. Hébert, has just died at the age of 91. He was still painting and exhibiting at the Salon during this, the last year of his long life, but he had changed his style very much since earlier days. At the Franco-British Exhibition his large picture, "Youth and Age" (exhibited many years ago at the Royal Academy) showed his old style, and two beautiful portraits his later style. Hébert was intended for the Law, but forsook it for art. He was a pupil of David d'Angers and afterwards of Delaroche, and obtained the Prix de Rome in 1839. He not only painted many easel pictures of remarkable excellence, but also made the decorative design for the mosaic composition in the interior of the dome of the Panthéon—"Christ showing to the angel of France the destinies of the French people"; a design made, we presume, before the latest secularisation of the church of Ste. Géneviève.

General Building News.

CHESTER CATHEDRAL.—Messrs. John Thompson & Co., contractors, of Peterborough, are engaged on the restoration of the south transept of Chester Cathedral. The restoration is being carried out to Mr. Gilbert Scott's designs in the XIVth century style. The restoration scheme provides for three pinnacles with tracery work and canopies, and an arched doorway.

WESLEYAN CHURCH, CARLISLE.—A new Wesleyan church has been built on a site at the junction of Blackwell-road and Currock-road. The building affords accommodation for 400 persons, and has been erected at an outlay of 1,500*l.* Mr. Matthew Johnstone was the architect, the contractors being the following:—Builder, Mr. W. Baty; joiner, Mr. W. Latimer; plumber, Messrs. Sharp Brothers; plasterer, Messrs. S. Ferguson & Sons; slater, Mr. J. Howitson; painter and glazier, Messrs. R. M. Hill & Sons; chairs, Mr. Hodgkinson; railings, Mr. R. Gouge; heating, Mr. Corbett; screens, Messrs. Stones, Ltd. The work has been carried out under the supervision of Mr. Scarborough.

NEW CHURCH, MANCHESTER.—The Committee of the St. Luke's Church Building Fund have commenced the erection of a new church in Dean-lane, Moston. The plans have been prepared by Mr. E. H. Lingen Barker, of Manchester, and the contract has been let to Messrs. W. Thorpe & Son for the sum of 3,718*l.*, not including tower and spire, which would cost another 850*l.*

CHRIST CHURCH, SOUTHWARK.—This church, which is situated in Blackfriars-road, has just been reopened after extensive repairs, which included underpinning, the foundations having been affected by the various building and other operations in the neighbourhood. The work, involving an expenditure of 1,350*l.*, has been done by Messrs. Hoare & Sons, under the supervision of Messrs. Caröe & Passmore, Architects to the Ecclesiastical Commissioners.

NEW WESLEYAN SUNDAY-SCHOOLS, CREWE.—New Sunday-schools for Trinity Wesleyan Church, Crewe, are now in course of erection, memorial-stones being laid on October 14. The schools consist of assembly-hall, 60 ft. by 33 ft., lecture-hall, 30 ft. by 16 ft., six classrooms, ladies' and gentlemen's cloakrooms, kitchen, heating chamber, and store-room. The buildings are situated at the rear of a site adjoining the church; the front portion of the site is now occupied by six cottages, but it is intended eventually to continue the school buildings to the front in line with the church. The main room flooring is of wood blocks, lighting by electricity, heating by low-pressure hot water, and ventilating on the "natural" system. The elevations are treated in a plain manner, with red-pressed bricks and Storeton stone. The contract was let to Messrs. Platt Brothers, of Shavington, near Crewe. The cost of the building will be nearly 2,000*l.*, exclusive of furnishing. Heating by Mr. Lewis Hill, of Liverpool; and ventilating by Messrs. Saunders & Taylor, Manchester. The architect is Mr. Francis P. Halsall, of Southport, whose plans were selected in a limited competition.

BOARD SCHOOL, COWDENBEATH, FIFE.—A combined elementary, supplementary, higher-grade, and mining school is proposed to be erected at Cowdenbeath for the Beath School Board. The accommodation to be provided in the basement consists of an engineering laboratory, with testing-room, storerooms, drawing office, large covered playgrounds for use in wet weather, a playroom, and a cookery-room. On the ground floor is a one-story building at the front, comprising headmaster's and janitor's rooms and two classrooms, each for forty pupils. Leading from this is the assembly-hall in the main building, the ceiling of which is arched and carried up to the roof. Access to the various classrooms is obtained from the assembly-hall and corridors leading from it. In this part of the building there are nine classrooms. The first floor is entirely devoted to higher-grade students, and comprises five classrooms, together with an art-room, wood workshop, etc. It is proposed to light the the building by means of electricity. The total cost is under 20,000*l.*, and the plans are by Mr. William Birrell, architect, Kirkcaldy.

WESLEYAN SUNDAY-SCHOOL, HUDDERSFIELD.—A new Sunday-school is being erected for the Wesleyan denomination at Sheepridge, Huddersfield. The building will be of stone, from plans by Messrs. Garside & Pennington, architects, of Pontefract and Castleford, and accommodation will be found for 200 scholars.

NURSES' HOME, SALOP.—A new nurses' home is being built in connexion with the Salop Infirmary. The plans are by Mr. Lloyd Oswell, of Shrewsbury, and the contract has been let to Mr. H. Price, also of Shrewsbury, for the sum of 8,300*l.* It will be a five-story structure of pressed bricks, with Grinshill stone dressings.

INSTITUTE PREMISES, ESCRICK, YORKS.—Institute premises have been built in this village at an aggregate cost of about 1,000*l.* Mr. Fairburn, of Wheldrake, was the builder, and the joinery work has been carried out by Mr. Cattley, of Escrick. Mr. C. W. Thompson prepared the plans.

TORPEDO FACTORY, GREENOCK.—It is stated that the Government is to erect a new torpedo factory at Greenock. The building is to consist of manufactory, offices, plateworkers' shops, etc., carpenters' shops, pattern-workers' shops, pickling-house, painters' shops, testing-house, experimental cell, timber-shed, and a police lodge. It will be 260 ft. long by 210 ft. wide, and the approximate total cost of the whole building will be about 50,000*l.* The stone for the building is being supplied from Steel's Gourock quarry, and the work will be carried out under the authorities at Rosyth. The contract for the building has been let to Messrs. R. Neill & Sons, of Manchester.

BUILDING TRADE IN PAISLEY.—At a recent meeting of the Paisley Dean of Guild Court the Dean made reference to the building operations carried out in Paisley for the year ending October. There were in all fifty-eight cases brought forward for disposal, as compared with seventy-seven the previous year. Of the total cases, however, only twenty-four were new buildings, comprising nine four-story tenements, eight three-story tenements, one two-story, and six villas, the remainder being made up with alterations to property and additions to public works. The total valuation was 85,630*l.*, a decrease as compared with the previous year of 32,790*l.* The Dean expressed the view that one of the chief causes of the depressed conditions of the building trade was the overproduction of a particular class of building within the past two or three years.

CHELSEA TOWN HALL EXTENSION.—On the 5th inst. the opening took place of the extensions that have been made at the Chelsea Town Hall. The additions are designed to correspond with the existing town hall. Increased accommodation has been provided for the staffs of the Town Clerk, the Borough Surveyor, and the Medical Officer of Health, and improved facilities for persons hiring the town hall. Mr. Leonard Stokes was the architect.

MEMORIAL HALL AT WHITEFIELD'S TABERNACLE.—A new hall has been opened at Whitefield's Mission as a memorial to the late Mrs. John Rylands. The hall is capable of holding about 200 people, and was erected from the plan of Mr. Hamilton Archibald.

NEW INSURANCE OFFICES IN PICCADILLY.—The new building of the Royal Insurance Company in Piccadilly, designed by Mr. John Belcher, A.R.A., has been opened. The offices are about 80 ft. in height to the top of the fourth floor, and there are two floors above that. The foundations and retaining wall are of ferro-concrete, the latter going down about 30 ft. below the pavement level. The front is relieved by some figures of *amorini* on the third-floor level, and by the coat of arms of the Company. The sculptors are Mr. Bertram Mackennal and Mr. Alfred Drury, A.R.A. The steel frame is carried to the roof, which is flat, of steel filled in with hollow bricks and covered with asphalt. The casement windows are of

bronze on the ground and mezzanine floors, and the dormers are of the same metal, while others are chiefly in steel. The staircase and landings are of Roman marble, with a dado of statuary marble and a Greek tinos capping. Teak and other hard woods have been used for the doors and mahogany panelling in the board-room. Messrs. Holloway Brothers have erected the building, Mr. W. Gunning being the clerk of the works.

PARISH COUNCIL CHAMBERS, BOTHWELL, N.B.—New chambers are about to be erected in Motherwell-road, Bellshill, by the Bothwell Parish Council. The plans, which were awarded first place among twenty-nine competitors, are by Mr. J. Gibb Morton, of Messrs. Beattie & Morton, St. Vincent-street, Glasgow. The estimated cost of the building is 2,000*l.*

NEW FIRE-STATION, HOLLOWAY.—The London County Council have erected a new station in Hertslet-road, Holloway. The new station has been erected by the Works Committee, the work having been commenced in May, 1907. The architect's estimate of the cost of the building was 9,895*l.* The station has been built entirely as a motor-station. The main elevations are faced with red brick with a salt-glazed brick dado. The elevation to Hertslet-road has stone dressings. The roof is slated.

PROPOSED ENLARGEMENT OF THE TOWN HALL, LEYTON.—A Local Government Board inquiry was recently held by Mr. R. H. Bicknell, M.Inst.C.E., into an application of the Leyton Council to raise a loan for the purpose of extending the office accommodation at the Town Hall. The proposed work, for which Mr. Jacques is the architect, is estimated to cost 8,600*l.*

PROPOSED EXTENSION OF THE TOWN HALL, ETC., HULL.—A Local Government Board inquiry has been held at Hull by Mr. H. R. Hooper with reference to an application by the Hull Corporation for sanction to borrow 121,550*l.*, of which 24,000*l.* is required for their electricity undertaking, 24,000*l.* for the widening and improvement of Midland-street, and 73,550*l.* for the completion of the scheme for rebuilding and extending the Town Hall. With regard to the last-named proposal the principal witness was Mr. Cooper, of Messrs. Russell & Cooper, architects. Mr. Cooper stated that it was originally contemplated that the whole work should cost 100,000*l.* In respect to the portion already erected, they obtained borrowing powers for 47,300*l.*, and now they were asking for 73,550*l.*, which brought the total to 120,850*l.*, not including furnishing for the Town Hall (municipal chambers) portion.

Stained Glass & Decoration.

MEMORIAL WINDOW, NEW WESLEYAN CHURCH, BISHOP'S TEIGNTON.—A memorial window, with the figure of "Christ the Light of the World," has been erected in this church, designed and executed by Mr. T. W. Camm, of Smethwick (Birmingham). Mr. Camm has also recently set up a memorial window in the Redland Green Chapel, Clifton, the subject being the Resurrection.

Sanitary and Engineering News.

PROPOSED NEW BRIDGE, FOSDYKE.—The Holland County Council have approved plans of a new bridge over the Welland at Fosdyke, submitted by Mr. J. Healy Johnson. Provision is made for a swing bridge at a lower level than the present structure, involving a smaller gradient in the approaches, whilst a wider road and waterway are contemplated. The Council has instructed Mr. Johnson to prepare detailed plans and specifications for the purpose of inviting tenders for the work, which is estimated to cost 18,000*l.*

BRIDGE-REPAIRING IN THE PEAKLAND DISTRICT.—A Local Government Board Inquiry was recently held at Chapel-en-la-Frith into an application of the Rural Council to borrow 2,000*l.* for the rebuilding and repairing of a large number of bridges belonging to the council. Mr. T. Partington, C.E., submitted plans of the bridges, and pointed out that many of them were exceedingly dangerous, the foundations having become undermined and the walls cracked. They had been built, he added, more than a hundred years.

PROPOSED RHYMNEY VALLEY SEWERAGE SCHEME.—The Gelligaer Urban District Council have decided that the sewerage scheme for the Rhymney Valley, which involves an expenditure of something like 70,000*l.*, be immediately proceeded with. Mr. Raikes (Birmingham) is acting as the Council's special engineer in the matter.

NEW BRIDGE OVER THE SPEY.—A new bridge has been erected over the River Spey at Blacksboat. The plans were prepared by Mr. P. M. Barnett, civil engineer, Aberdeen. The bridge has three spans, with 14 ft. of roadway, and is capable of carrying a distributed weight of 25 tons. The cost is about 3,000*l.*

WATER SUPPLY SCHEME, ST. ANDREWS, N.B.—At a meeting of the St. Andrews Town Council a report by Mr. James Watson, C.E., Bradford, the engineer appointed by the Council to advise the best means of augmenting the present water supply, was adopted. Mr. Watson recommended the adoption of what is known as the Cameron Burn scheme. The gathering ground in this scheme has an area of 1,460 acres, and after allowing for compensation water St. Andrews would have an additional available water supply of 479,250 gallons per day. Mr. Watson estimates the probable cost of the scheme at 17,000*l.*

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—Messrs. Mark Fawcett & Co. have removed their engineering staff to their works at Tunnel-avenue, East Greenwich, and inquiries for constructional steelwork and fire-resisting floor-work should be addressed there. "Edwardian chimney-pot" business will still be dealt with from Westminster.

"NEW BUILDINGS, HIGH-STREET, KENSINGTON."—In describing our sketch of a building, part of a terrace, under this heading in "Notes" (page 484 in last issue) we referred to the dressings as in cement. It appears that our artist must have been so much taken up with admiring the design that he was sketching that he forgot to look carefully at the materials, for Mr. Chesterton, the architect, writes that the dressings are Portland stone. We can only apologise to him for the mistake, for which we have offered the only excuse possible.

SUBLETTING STONE-POINTING CONTRACTS.—Sir Howell Davies inquires of the Secretary of State for War whether in the contract work now proceeding at the Horfield Barracks, Bristol, the contractor has power to sub-contract stone pointing; and, if so, whether he will consider the desirability of preventing such subletting in all future Government work.—Mr. Haldane replies in the Parliamentary papers that inquiry will be made into the matter.

THE LONDON COUNTY COUNCIL AND BUILDING ACTS.—A comprehensive but somewhat belated volume of London statistics was issued by the London County Council on Friday last week, and states, among other things, that the number of dangerous structures condemned by the Council in 1906-7 amounted to 4,445. During the year 115 structures were hoarded in or shored up, and in eight cases the owners of condemned structures went to arbitration, when the Council's requirements were upheld in all cases except one; 588 summonses were issued during the year in consequence of the owners failing to comply with the Council's requirements, and in 223 cases orders were obtained; 359 summonses were withdrawn, the work having been executed, one was adjourned, and five were dismissed. The number of new buildings erected in the whole of the administrative county was 7,191; while the fees received amounted to 19,987*l.* The number of additions, alterations, and other works totalled 22,059, with fees amounting to 27,897*l.*, and the number of cases under the London Building Act was 6,742, with fees amounting to 2,999*l.*, making a grand total of 35,992, and 50,883*l.* in fees; 2,235 applications were made to the Council under the Building Acts 1894 and 1898 for various purposes, out of which 1,824 were granted.

COMMONS AND FOOTPATHS PRESERVATION SOCIETY.—Lord Eversley presided over the monthly meeting of the Commons and Footpaths Preservation Society held last week at 25, Victoria-street, Westminster. A vote of condolence was passed on the death of Mr. J. C. Parkinson, one of the founders of the Society in 1865. It was decided to co-operate with the Thames Preservation League in the issue of a Whip in support of Mr. Morrell's proposed amendment to the Port of London Bill, to provide for an appeal to the Local Government Board in the event of the new Upper River Board of Conservators failing to take steps to preserve the purity of the river, or to maintain the rights and interests of the public in respect of the Thames and its towpaths for recreation and otherwise. It was also agreed to take concerted action with the Metropolitan Public Gardens Association and the National Trust in pressing Mr. Cowan's amendment to the Housing and Town Planning Bill, with the object of preventing the utilisation for building purposes of commons and other open spaces; as it was unanimously felt that, if the measure passes into law in its present form, no open space in the country will be safe from encroachment. The Society decided to convene a meeting of its Parliamentary supporters to determine what action shall be taken to secure the passage of its Public Rights of Way Bill, in support of which numerous resolutions continue to be received from local authorities, natural history societies, and rambling clubs. It was reported that the Society was acting as arbitrator in several rights of way disputes, and that it was dealing with 380 cases of the obstruction of footpaths and other highways, and the enclosure of common lands.

EDUCATION ARCHITECT OF THE LONDON COUNTY COUNCIL.—The Education Committee of the London County Council have had under consideration the question of the retirement of Mr. T. J. Bailey, the Architect to the Education Department, and have decided to inform the General Purposes Committee that it would be detrimental to the Council's interests if Mr. Bailey were to retire before the work arising out of the survey of non-provided schools is finally complete.

LABOURERS AS PAINTERS.—In the Parliamentary papers Mr. Nannetti asks if it is a fact that labouring men are engaged by the contractor doing painter's work on girders and other metal works at the Royal College of Science, Dublin, and whether this is in accordance with the Fair Wages resolution of the House.—Mr. Hobhouse replies that he is informed that a labourer has been engaged by the contractors in coating the structural girders at the College with preservative paint. This is in accordance with the invariable practice, both in Ireland and England, for work of the kind, and was not a violation of the terms of the Fair Wages resolution. It was not finished painting requiring the employment of a skilled workman, but coating of a rough description carried out for preservative purposes only. The girders will ultimately be covered by concrete or plaster. All painting work on metal and elsewhere, properly assignable to skilled workmen, has been, and would be, executed by such workmen, and paid for at the usual current rate of wages.

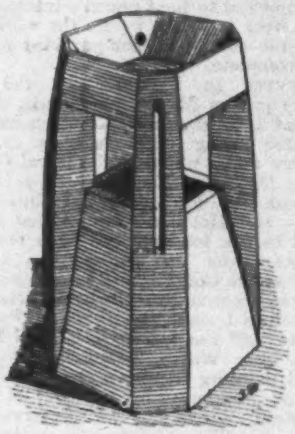
STIRLING CASTLE.—Mr. Dundas White has asked the First Commissioner of Works when Stirling Castle passed under the control of the Office of Works; and what steps have since been taken to preserve the buildings, to continue the military traditions, and to maintain the historic associations of the castle.—Mr. Harcourt replies in the Parliamentary papers to the effect that the castle passed under control of the Board of Works in December, 1906, when immediate steps were taken to rescue the ancient historic buildings from the condition of decay and defacement into which they were rapidly falling. Interesting original work of an architectural character has been discovered and preserved, and serious structural defects threatening the ruin of the ancient fabric have been repaired. The military traditions remain undisturbed.

THAMES CONSERVANCY.—At the meeting of the Board on Monday permission was granted the British Coalite Company to place a 12-in. discharge pipe in the river at their works at Barking Reach. A report was received from the Secretary and the Engineer with regard to the silting up of the channel in this reach, and the Lower River Committee recommended that they be authorised to apply to the London County Council for a substantial contribution towards the cost of deepening and maintaining same. The recommendation was referred back with the object of a conference being arranged between the two bodies on the subject. Permission was given to carry out the following works under protective conditions:—Messrs. Spillers & Bakers, Ltd., Cardiff, to erect a crane, etc., overhanging the river at their premises, Newbalds Wharf, Bermondsey Wall; Messrs. Price & Reeves, to erect a temporary cofferdam and staging for the construction of the embankment at the property of the London County Council on the Surrey side below Westminster Bridge; the Royal Mail Steam Packet Company, to extend the decking of their jetty at Morocco Wharf, Wapping, over the whole of the open space between the two gangways, and also to erect a centre platform and roof over the centre part of the jetty.

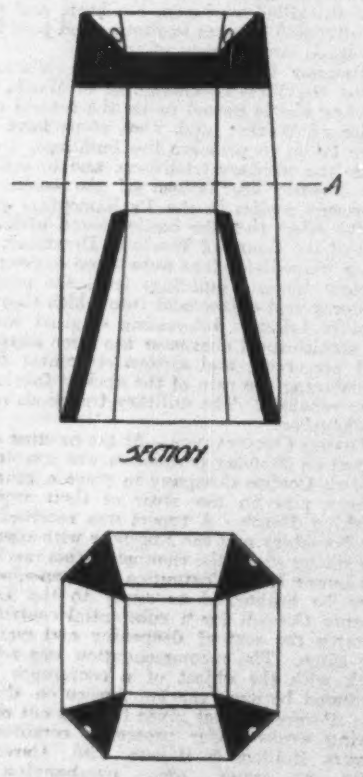
THREATENED YORK GATEWAY.—On the proposal to demolish the Queen Margaret's Gateway, at York, for the purposes of street improvement, Mr. C. E. Elmhirst, Secretary of the Yorkshire Philosophical Society, by whom the Abbey wall and the gateway were transferred to the Corporation, has written a letter of protest on behalf of the Society to the Corporation. He calls attention to the conveyance in 1896 by the Yorkshire Philosophical Society to the Corporation, and the express covenant by

the Corporation that "the walls, buttresses, towers, and postern shall be gradually restored and be kept in repair by the Corporation, who shall at no time take down any part except for the purpose of restoration and re-erection." This covenant, he points out, would certainly not be complied with by the Corporation taking down the archway and erecting it elsewhere, as the whole interest attaches to its present position. "Under the circumstances," he adds, "I think you will agree that it is not within the power either of a Committee or the Corporation to remove this gateway or any part of the old Abbey wall."

A NEW CHIMNEY-POT.—The chimney-pot illustrated here has been worked out on scientific lines, and as the result of a good deal of thought and experiment, by Mr. Mark Fawcett. It is made in two forms, on either a square or a circular plan; but as the square is considered by the inventor (and we agree with him) to be



Perspective Sketch.



The "Edwardian" Chimney-Pot.

the more efficient form, we illustrate that in preference. It is a solid fire-clay chimney-pot designed with the object of arranging the surfaces so as to create an up current when the wind strikes it, and divert cross or down current. The sloping sides, between the supports, turn the wind in an upward direction; the uprights are planned so as to converge the current on the windward side and present only an edge to it on the further side, so as not to throw it back into the chimney opening. The most novel feature is the dished top, the effect of which is expected to be to throw upward any blast of wind striking the top. The solid top also retains a good deal of the heat coming up the chimney and is claimed to have some effect in keeping up the heat of the fire and flue. This at all events is a windguard chimney-pot which has been planned in a thoughtful manner, and it has moreover the advantage that it looks well, and is a solid and architecturally designed termination to a flue. It is hoped by the inventor that its adoption would assist in delivering London roofs from some of the disfigurement of the long metal additions known colloquially as "tall-boys." It is worth the attention of architects and builders.

MEMORIAL IN ST. PAUL'S.—A memorial to the late Sir George Williams, founder of the Young Men's Christian Association, has been placed in the crypt of St. Paul's Cathedral. The monument is placed on one of the pillars towards the west end, and is the work of Mr. Frampton, R.A. It consists of a bust of Sir George. On each side of the pedestal is a semi-reclining figure, one representing Earth, holding an orb in one hand and the Bible in the other, and the second symbolising Heaven.

TOWN CLOCK, EBBW VALE.—It is proposed at Ebbw Vale to erect a town clock. The design has been prepared by Mr. J. W. Horsfall, architect, Ebbw Vale, and it is proposed to expend about 300*l.* on the work.

Law Reports.

CASE UNDER THE LONDON BUILDING ACT.

THE case of the Regent's Canal and Dock Company *v.* the London County Council came before a Divisional Court of King's Bench, consisting of the Lord Chief Justice and Justices Walton and Sutton, last week, on the appeal of the Canal and Dock Company from a decision of the Stipendiary, holding the appellant Company liable, under the clauses of the London Building Act, 1894, relating to dangerous structures, to repair the bridge which crosses the canal in the vicinity of the City-road, N.

Mr. Horace Avory, K.C., and Mr. Mathew appeared for the appellants; and Mr. Daldy for the respondents upon the appeal.

It appeared from the statement of Mr. Avory that the appellant Company was incorporated in 1812, and under their private Act of Parliament they were empowered to make, build, and erect as many bridges as the Company thought necessary for the purposes of their undertaking. It was not disputed that there formerly stood on the site of the bridge in question a footbridge which was erected by the Company in 1819. In the year 1858 one, John Jay, an owner of land adjoining the canal, made a proposal to the general committee of the appellant Company that he should rebuild the footbridge. This was agreed to, and a new iron bridge was erected, which was the bridge in question. The magistrate found that it was impossible to say whether the erection of the bridge was or was not carried out at the expense of Mr. John Jay, and whether, if so carried out at his expense, Mr. Jay did not receive some advantage from the Company in return for the expense. Respondents served the Company with notice to repair the bridge, and, the Company not complying, the present summons was taken out. At the hearing of the summons before the magistrate it was contended on behalf of the appellant Company that they were not the "owners" of the bridge, and that by virtue of the agreement with Mr. Jay they were under no liability to repair it. It was also contended on behalf of the Company that if there was any liability upon anyone to repair the bridge the liability was upon Mr. Jay or his legal or personal representatives. On behalf of the respondents it was contended that in the circumstances the appellants were the "owners" of the bridge, and were liable for the repairs, and that, in any event, the appellants were bound to repair so much of the present bridge as corresponded to the old footbridge. The magistrate held that the appellants were the "owners" of the footbridge, and that by entering into the agreement with Mr. Jay in 1858 they had not ceased to be the "owners" of the iron bridge within the meaning of the London Building Act, and that, notwithstanding sect. 79 of the appellant Company's private Act, they were not relieved from the obligation of repairing it. The magistrate accordingly made an order upon the appellants in the terms of the summons. The learned counsel contended that the magistrate should not have held the appellants liable for the repairs in the circumstances, and that the order appealed against should be discharged.

In the result their lordships, without calling upon counsel for the respondents, affirmed the decision of the magistrate, and dismissed the appeal with costs.

STATUTORY POWERS OF A COMPANY TO LAY DOWN WATER MAINS.

MR. JUSTICE SWINFEN EADY, in the Chancery Division, on the 10th inst., concluded the hearing of the case of Marriott and others *v.* the East Grinstead Gas and Water Company—an action brought by the plaintiffs for a declaration that the defendants had no right to lay down on certain land at Hackenden any pipes, conduits, or other works in connexion with the defendants' undertaking; or alternatively that the defendants had no right to lay down any such pipes or other works without notice to the plaintiffs and their consent.

It appeared that the defendants, under their special Act, were granted the power to acquire land compulsorily for the purpose of erecting specified works in connexion with the supply of water to East Grinstead. On a piece of land so purchased by the defendants they had erected a new pumping-station, in connexion with which they intended to lay down a 6-in. main in the soil under a public footpath passing along the margin of land which was owned by the plaintiffs in moieties, and which path the plaintiffs were bound to maintain. Plaintiffs' case was that the defendants could not do what they proposed to do without their consent previously had been obtained, and the main question to be decided was whether the defendants would be exceeding their statutory powers by laying down the main, and whether, if they had acted *ultra vires*, the plaintiffs could raise the objection in the absence of the Attorney-General.

At the conclusion of the arguments of counsel his lordship, in giving judgment, said it was admitted that the footpath in question, though a public highway, was not repairable by the public at large, but was under the management and control of the plaintiffs. But that only affected the question to whom notice should be given if the legal right existed, for it was a public highway, and if the work was within the defendants' powers they were entitled to do it on giving proper notice. The whole question, therefore, was whether what the defendants proposed to do was within their powers. His lordship having referred to the defendant company's special Act, and the decided cases bearing on the subject, held that the plaintiffs had established their right to judgment without the Attorney-General being added as a party, and granted a declaration that the defendants were not entitled to lay down the proposed 6-in. main or any main pipes, conduits, service pipes, or other works or engines in or under the public footway in question without giving previous notice to the plaintiffs. He also granted an injunction restraining the defendants from laying down or placing a 6-in. main or other pipes or works in connexion with their pumping works at Hackenden.

Judgment was accordingly entered for the plaintiffs with costs.

Mr. Frank Russell, K.C., and Mr. Manning appeared for the plaintiffs; and Mr. Cripps, K.C., Mr. Macnaghten, K.C., Mr. Wheeler, and Mr. Lawrence for the defendants.

Patents of the Week.

APPLICATIONS PUBLISHED.*

22,306 of 1907.—A. STELZER and P. JAHN: *Screwing Machines.*

This relates to a screwing machine for cutting threads either on one or both sides of rods, tubes, and the like, wherein the piece to be screw-threaded at both ends is fastened in a central rest, which is capable of a certain amount of free movement, whilst, for a piece to be threaded at one end, the central rest is removed, and the cutting-head at one side is replaced by a chuck.

22,632 of 1907.—F. W. MEWS: *Locks.*

This relates to a tumbler consisting of parts which are able to be displaced relatively to one another, of which one part has the face engaged by the key, and the other part has, for example, a detent slot which engages with the detent means, characterised by the fact that one of the parts, both of which are mounted displaceably on the bolt and take part in its movement in the lock-case, embraces the other part, and being held fast against it only by the friction of their surfaces which touch one another (*i.e.*, without fastening means as screws, or pins, or means which press the one part against the other, such as springs), so that the overcoming of the said friction alone is necessary for the purpose of reciprocally displacing the two parts of the tumbler.

23,208 of 1907.—A. JONES and THE TREMBARAN COMPANY, LTD.: *Furnace Firegrates.*

This relates to a firegrate for kilns and other purposes, comprising a trough-shaped casting

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

PATENTS.—*Continued on page 544.*

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xviii.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements: and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

NOVEMBER 14.—**Whitehaven.**—PUBLIC ELEMENTARY SCHOOL.—Whitehaven Education Committee invite from architects practising exclusively in Cumberland or residents therein or whose head office has been located in Cumberland since January, 1907, designs (sketch-plans only) and estimates for a new public elementary school and caretaker's cottage, to be erected in Whitehaven, to accommodate 500 scholars (500 mixed and 200 infants). Plan of site and conditions may be obtained on application to Mr. W. D. P. Field, Secretary, Town Hall, Whitehaven.

NOVEMBER 17.—**Dalnottar.**—CEMETERY LODGE.—Old Kilpatrick P.C. invite architects to prepare plans, etc., for the erection of cemetery lodge, offices, and boundary walls of Dalnottar Cemetery. Terms to be arranged between architect to be appointed and the Parish Council. Applications to be lodged with Mr. Wm. Fraser Mackenzie, Clerk to Parish Council, Parish Council-chambers, Dalmuir.

NOVEMBER 25-JANUARY 11.—**Pontefract.**—SECONDARY SCHOOL FOR GIRLS.—The Governors of the Pontefract Secondary School (girls) invite architects having offices within the administrative area of the West Riding of Yorkshire C.C. to submit designs and estimates for a proposed secondary school for girls to be erected on a site in the Park, Pontefract, 3 acres in extent, at a cost of about 5,250*l.* (for the buildings only). Premiums of 30*l.*, 20*l.*, and 10*l.* are offered for the designs placed first, second and third respectively. The Governors will be assisted in adjudicating upon the competitive drawings by the County Architect and the West Riding Education Committee's Inspector for Secondary Education. Printed conditions, etc., can be obtained on written application to Mr. Charles Lowden, Secretary, Solicitor, Ropergate, Pontefract, accompanied by a stamped, addressed, brief envelope, and a deposit of 1*l.* 1*s.*

DECEMBER 1. — **London.** — POSTER. — Designs for poster in connexion with forthcoming Building Trades Exhibition, Olympia (April 17 to May 1, 1909). Particulars and entry forms from Mr. H. Greville Montgomery, M.P., Building Exhibition Offices, 43, Essex-street, Strand, W.C. See advertisement in our issue of October 17 for further particulars.

* DECEMBER 10.—FERRO-CONCRETE.—Designs for the architectural treatment of a building constructed in ferro-concrete. See advertisement in this issue for further particulars.

DECEMBER 14. — **Blackpool.** — CENTRAL PUBLIC LIBRARY.—Competitive designs are invited for the erection of a new Central Public Library. Premiums of 50, 30, and 20 guineas. Plan of site and conditions may be obtained on application to Mr. T. Loftos, Town Clerk, Town Hall, Blackpool, on payment of a deposit of 1*l.* 1*s.* See advertisement in our issue of September 19 for further particulars.

DECEMBER 19.—**Preston (Lancs).**—ADDITIONS TO ASYLUM.—The Committee of Visitors for the County Asylum at Whittingham, near Preston, invite designs, etc., for a new annexe for about 700 pauper lunatics. Conditions and plan of site may be obtained on payment of a deposit fee of 5*l.* 5*s.* from Mr. Leonard Cotman, Law Clerk to the Committee of Visitors for Whittingham Asylum, 9, Lune-street, Preston. See advertisement in our issue of October 10 for further particulars.

DECEMBER 31.—**Cornwall.**—COUNTY OFFICES.—The Cornwall C.C. invite competitive designs for the above. Premiums of 50*l.*, 30*l.*, and 10*l.*; premium for successful design to merge into architect's commission. Particulars on receipt of deposit of 1*l.* 1*s.* to be obtained from Mr. Christopher L. Cowlard, Clerk to the County Council, Bodmin. See advertisement in our issue of October 3 for further particulars.

NO DATE. — **Swinton.** — SCHOOL. — Swinton and Pendlebury U.D.C. invites architects having their place of business within ten miles of Manchester, to send in competitive designs for new schools, to be erected off Cromwell-road, near Swinton Station. Premiums of 50*l.*, 25*l.*, and 10*l.* respectively will be awarded. The instructions may be obtained on application by letter to Mr. W. T. Postlethwaite, Clerk to the Council, Council Offices, Swinton, Manchester.

Contracts.

BUILDING.

NOVEMBER 15. — **Belfast.** — CHURCH. — Building Moravian Church, Cliftonville, Belfast, in accordance with the plans, etc., which may be inspected at the office of the architect, Mr. J. St. John Phillips, A.R.I.B.A., 16, Donegall-square South, Belfast. Quantities may be obtained from Mr. S. C. Hunter on payment of 2*l.* 2*s.*

NOVEMBER 16.—**Estate of Auchnacant, N.B.**—HOUSE.—Mason, carpenter, slater, plasterer, and plumber works of new dwelling-house for the Farm of Mains of Auchnacant, Foveran. Plans, etc., may be seen with Mr. Leslie Tait, Mill of Foveran.

NOVEMBER 16. — **Yeadon.** — COOKERY-ROOM.—West Riding C.C. Education Committee invite whole or separate tenders in connexion with the erection of a cookery-room at South View Provided School, Yeadon. Plans may be seen, and bills of quantities obtained, on application to office of Mr. J. Vickers-Edwards, County Architect, County Hall, Wakefield. A deposit of 1*l.* must be posted, addressed to the West Riding Treasurer, County Hall, Wakefield. A separate letter must be sent to the West Riding Architect for quantities.

NOVEMBER 17.—**Barrow-in-Furness.**—ALTERATIONS TO SCHOOLS.—The Corporation invite tenders for alterations and additions to Oxford-street Infants' School. Plans may be seen, and bills of quantities obtained, upon application at the Borough Engineer's Office.

NOVEMBER 17. — **Bradford.**—LAUNDRY EXTENSION.—Bradford Corporation invite tenders for works of all trades in extension of laundry at the City Hospital, Leeds-road. Drawings, etc., may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

NOVEMBER 17.—**Bradford.**—TENEMENT DWELLINGS.—Bradford Corporation invite tenders for works of all trades required in the erection of superstructure of five blocks of tenement dwellings, Longlands District. Drawings, etc., may be seen, and bills of quantities, etc., obtained, on application to the City Architect, Whitaker-buildings, Brewery-street, Bradford.

NOVEMBER 17. — **Staincross.**—REPAIRS.—The West Riding Standing Joint Committee invite tenders for the repairs to the Police-constable's House at Staincross. Specifications may be obtained on application at office of Mr. J. Vickers-Edwards, County Architect, County Hall, Wakefield.

NOVEMBER 19.—**Darwen.**—SCHOOL.—Darwen Education Department invite tenders for the erection of an elementary school to accommodate 510 children. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application to Mr. R. W. Smith-Saville, Borough Engineer and Surveyor to the Education Committee, at the Municipal Offices, Darwen.

NOVEMBER 18.—**Minehead.**—HOUSE.—Erection of a new house on the North Hill at Minehead for Mr. R. H. Holman. The plans, etc., may be inspected by appointment at the office of Messrs. Andrew & Hosegood, architects and surveyors, Williton, Somerset.

NOVEMBER 18. — **Milnsbridge.** — HOUSE.—Erection of house and shop, Cowlersley-lane, Milnsbridge. Plans may be seen, and quantities obtained, at offices of Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge and Huddersfield.

NOVEMBER 18. — **Tylorstown.**—CHURCH.—Building a church at Cymlwyn-du, Tylorstown, for the Rev. John Rees. The plans, etc., may be seen, and quantities obtained, at office of Mr. E. M. Bruce Vaughan, F.R.I.B.A., architect, 21, Dumfries-place, Cardiff, on receipt of a deposit of 2*l.* 2*s.*

NOVEMBER 20. — **Belfast.** — SCHOOLS. — New male schools, Seaforde-street, Belfast. The plans, etc., can be inspected at offices of Mr. J. J. M'Donnell, architect, 27, Chichester-street, and bills of quantities obtained from Mr. Acheson Ferguson, Scott'sh Provident-buildings, on deposit of 1*l.* 1*s.*

* NOVEMBER 20. — **Berkshire.** — NEW BUILDINGS.—The Berkshire Education Committee invite tenders for new buildings. See advertisement in this issue for further particulars.

NOVEMBER 20. — **Pentre.** — REPAIRS, ETC.—Rhondda U.D.C. invite tenders for repairs, painting, etc., at the premises known as the "Old Higher Grade School" at Pentre. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the office of the architect, Mr. Jacob Rees, Hillside Cottage, Pentre, upon the production of a receipt from the Accountant of the Council for the required deposit of 1*l.* 1*s.*

NOVEMBER 20—**Portslade.**—REPAIRS, ETC.—London and Brighton Education Committees' Managers of Portslade Industrial School, near Brighton, invite tenders for internal repairs, distempering, etc., to the school premises. Specifications may be seen, and forms of tender obtained at the offices of the Surveyors to the Managers, Messrs. T. Simpson & Son, 17, Ship-street, Brighton.

NOVEMBER 21.—**Guildford.**—PIGGERIES.—The Guildford Guardians invite tenders for erecting a block of piggeries in the grounds of the Workhouse, Guildford. Plans, etc., can be seen, and a form of tender obtained, at the offices of the architect, Mr. Edward L. Lunn, 36, High-street, Guildford.

NOVEMBER 21. — **Tresadderne.** — WAIN HOUSE.—Erection of a wain house at Tresadderne, in the Parish of Ruan Major, in the occupation of Mr. S. H. Rowe. Plans, etc., are now at the Farm House at Tresadderne.

NOVEMBER 22.—**Seven Sisters, Neath.**—HOUSES.—Erection of sixteen dwelling-houses on Ynysdawly Estate, Seven Sisters. Plans, etc., may be seen at Ynysdawly Farm.

NOVEMBER 23. — **Marsden.** — SCHOOL.—The West Riding Education Committee invite tenders in connexion with the erection of a new school at Marsden, near Huddersfield. Plans may be seen, and bills of quantities obtained, on application to office of Mr. J. Vickers-Edwards, County Architect, County Hall, Wakefield. A deposit of 1*l.* is required. Deposits must be posted addressed to the West Riding Treasurer, County Hall, Wakefield. A separate letter must be sent to the West Riding Architect asking for the quantities.

NOVEMBER 23.—**Ovenden.**—ADDITIONS TO WORKS.—Masons', joiner's, concretor's, asphalter's, slater's, plumber's, painter's, and steel and iron work required in additions to works at Ovenden. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Joseph F. Walsh, F.S.I., and Graham Nicholas, F.R.I.B.A., architects, Museum-chambers, Halifax.

NOVEMBER 23. — **Ystradgynlais.** — INTERMEDIATE SCHOOLS.—The Governors of the Ystradgynlais Intermediate Schools invite tenders for the erection of an intermediate school at Ystradgynlais to accommodate 120 children. Plans, etc., may be seen, and bills of quantities obtained, at the offices of the architect, Mr. J. Cook Rees, Parade-chambers, Neath, on payment of 1*l.* 1*s.*

* NOVEMBER 24.—**Canning Town.**—UNDERGROUND CONVENIENCE.—The West Ham B.C. invite tenders for an underground convenience, Beckton-road, Canning Town, E. See advertisement in this issue for further particulars.

* NOVEMBER 24. — **Hackney Marsh.** — DRESSING-SHEDS.—The London C.C. invite tenders for dressing-sheds at Hackney Mash. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Manchester.** — LODGING-HOUSE.—Manchester Sanitary Committee invite tenders for the erection of women's lodging-house, Corporation-street. Drawings may be seen, and specification, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 2*l.* 2*s.* All cheques or postal orders are to be made payable to the order of "The Corporation of Manchester."

NOVEMBER 24.—**Ystrad Rhondda.**—REPAIRS, ETC.—Rhondda U.D.C. invite tenders for general repairs, painting, etc., to be done at observation block, discharging block, mortuary, administrative block, two pavilions, etc., of the Isolation Hospital, Ystrad Rhondda. Plans, etc., may be seen, and tender forms obtained, at the office of the architect, Mr. W. D. Morgan, 194, Ystrad-road, Pentre, upon the production of a receipt from the Accountant of the Council for the required deposit of 1*l.* 1*s.*

NOVEMBER 25.—**Darlington.**—LOCOMOTIVE WORKS.—North-Eastern Railway Directors invite tenders for trades in connexion with the erection of locomotive works, Stooperdale, Darlington. Plans, etc., may be seen, and quantities, etc., obtained, upon application to Mr. William Bell, the Company's Architect at York.

NOVEMBER 25.—**Elgin.**—VILLA.—Mason, carpenter, slater, plumber, plasterer, painter, and glazier works of villa, to be erected at the West End. Plans, etc., may be seen with Mr. Charles C. Doig, architect, Elgin.

NOVEMBER 26. — **Hereford.** — MORTUARY CHAPEL.—Hereford T.C. invite tenders for the erection and completion of a mortuary chapel at the Cemetery, Westfaling-street, Hereford. Copies of the specification, etc., can be obtained at the office of Mr. John Parker, City Surveyor, Hereford, upon payment of 1*l.* 1*s.* per copy.

NOVEMBER 26.—**Hoylake.**—SCHOOL.—The Administrative Sub-committee for Education of Cheshire C.C. (Hoylake and West Kirby District) invite tenders for the erection of a higher elementary school at Hoylake. The plans may be seen, and quantities obtained, at the offices of the architect, Mr. Edmund Ware, 20, Exchange-street East, Liverpool, on payment of a deposit of 3*l.* 3*s.*

* NOVEMBER 26.—**Newcastle-on-Tyne.**—ADDITIONS.—The Commissioners of H.M. Works and Public Buildings invite tenders for enlargement of the Head Post-office. See advertisement in this issue for further particulars.

NOVEMBER 27.—**Merthyr Tydfil.**—PAVILION.—The erection of an additional pavilion, together with other work, at the Mardy Isolation Hospital, Merthyr Tydfil. Plans may be inspected, and specification, etc., obtained, upon deposit of the sum of 2*l.* 2*s.*, upon application to the Borough Engineer, Town Hall, Merthyr Tydfil.

* NOVEMBER 28.—**Leyton.**—TOWN HALL EXTENSION.—The Leyton U.D.C. invite tenders for extension of the Town Hall. See advertisement in this issue for further particulars.

* NOVEMBER 30.—**Sandhurst (Kent).**—SCHOOL.—The Kent Education Committee invite tenders for new Council School at Sandhurst. See advertisement in this issue for further particulars.

* DECEMBER 3.—**London.**—MUSEUM EXTENSIONS.—The Commissioners of H.M. Works, etc., invite tenders for extensions to the British Museum. See advertisement in this issue for further particulars.

DECEMBER 7.—**Drumaghlis.**—SCHOOL-HOUSE.—The time for receiving tenders for the erection of

Drumaghlis School-house has been extended to December 7. Further particulars may be had from Mr. John M'Robert, J.P., Rademon, Crossgar, and 13, Wellington-place, Belfast.

* DECEMBER 10.—**Golder's Green.**—CHURCH.—Tenders invited for new church at Golder's Green. See advertisement in this issue for further particulars.

* DECEMBER 15.—**Ponders End.**—INFANTS' SCHOOL.—The Enfield Education Committee invite tenders for erection of an infants' department, with central hall. See advertisement in this issue for further particulars.

NO DATE.—**Fenton.**—WALLS.—Fenton U.D.C. invite tenders for the erection of boundary walls and fencing at their yard in Fountain-street. Plans, etc., may be seen, and further particulars obtained, on application at office of Mr. S. A. Goodall, Surveyor to the Council, Town Hall, Fenton.

NO DATE. — **Ferryhill.** — SCHOOLS. — Primitive Methodist Schools, Ferryhill Village. Names to Messrs. T. E. Davidson & Son, architects, Pearl-buildings, Newcastle-on-Tyne.

NO DATE. — **Hull.** — PREMISES. — Erection of new premises, Holderness-road, Hull. Names to Mr. Arthur Easton, architect, 7, Land-of-Green-Ginger, Hull.

NO DATE.—**Otley.**—ADDITIONS TO HOUSE.—Additions to house known as Silverdene, Otley. Apply to Mr. Bertram Winship, architect, 9, Denning-road, Hampstead, N.W.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 17 AND 24.—**London.**—SPANS, ETC.—The Secretary of State for India in Council invites tenders for supply of (1) spans, 40 ft.; (2) spans, 60 ft.; (3) locomotive engines and tenders. The conditions of contract may be obtained on application to the Director-General of Stores, India Office, Whitehall, S.W.

NOVEMBER 17.—**Manchester.**—BOILERS.—Manchester Corporation Tramways Committee invite tenders for the supply of (a) two steel boilers, for heating purposes; (b) hard-drawn copper trolley wire. Specifications, etc., may be obtained on application to Mr. J. M. M'Elroy, General Manager, Tramways Department, 55, Piccadilly, Manchester.

NOVEMBER 18.—**Oakerthorpe.**—BRIDGE.—Derbyshire C.C. invite tenders for the building of a small two-arched brick bridge at Oakerthorpe, on the main road from Clay Cross to Ambergate. The drawings, etc., may be seen, and form of tender obtained, at the office of the County Surveyor, St. Mary's-gate, Derby.

NOVEMBER 19.—**Darlington.**—PUMP.—Corporation invite tenders for supplying and fixing at the New Water Tower, Harrogate-hill, an electrically-driven centrifugal pump. Plans, etc., may be obtained on application at the office of Mr. George Winter, Borough Surveyor and Waterworks Engineer, Town Hall, on depositing a cheque for 2*l.* 2*s.*

NOVEMBER 20.—**Oldham.**—MECHANICAL STOKERS.—The Electricity Committee of the Corporation invite tenders for the supply and erection of mechanical stokers for the dry-back marine and climax boilers at the generating-station, Greenhill, Oldham. Specifications can be seen or obtained on application to Mr. S. Wilmott Newington, Borough Electrical Engineer, Greenhill Electricity Works, Oldham. A charge of 1*l.* 1*s.* will be made for each copy of the specification.

NOVEMBER 21.—**Chorley.**—STEEL TUBING.—Chorley Corporation invite tenders for about 78 lin. yds. of steel tubing, 36 in. internal diameter, ½-in. metal, in 18-ft. lengths. Specification and further particulars may be had from the Borough Surveyor.

NOVEMBER 24.—**London.**—GIRDERS.—Great Western Railway Directors invite tenders for the supply of about 1,420 tons of steel bridge girders and other iron and steel work of British manufacture, to be let in four contracts. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Paddington Station.

NOVEMBER 24.—**London.**—ROOFING.—Great Western Railway Directors invite tenders for corrugated-iron roofing work, etc., at Paddington Goods Station. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Paddington Station.

DECEMBER 2.—**London.**—ENGINES, ETC.—The East Indian Railway Company invites tenders for the supply and delivery of locomotive engines and tenders, as per specification to be seen at the Company's offices, Nicholas-lane, London, E.C. For each specification a fee of 1*l.* 1*s.* is charged, which cannot under any circumstances be returned.

DECEMBER 7. — **Dublin.** — BRIDGE WORKS.—Great Northern Railway Company (Ireland) Directors invite tenders for the reconstruction of five steel girder bridges. Drawings, etc., at the office of Mr. W. H. Mills, Engineer-in-Chief, Amiens-street, Dublin, or copies of same at the District Engineer's Office, Belfast.

MISCELLANEOUS.

NOVEMBER 16.—**Dublin.**—VAN.—The Public Health Committee invite tenders for the construction of a van for use in the Disinfecting Department, Marrowbone-lane. Particulars can be had at the Public Health Office.

NOVEMBER 16.—**Holmnook.**—WATER-CLOSETS, ETC.—The Managers of Irton Schools, Holmnook, invite tenders to provide and fix a series of new pedestal water-closets, urinals, plumbing and other work at the schools. Specifications, etc., may be had from Mr. W. Tritton-Jones, surveyor, Ravenglass, Cumberland.

NOVEMBER 16.—**Leicester.**—LAMPS.—The Guardians invite tenders for supplying and fixing transformers and metal filament lamps in four pavilions at the North Evington Infirmary. Specifications can be obtained at office of Mr. Herbert Mansfield, clerk, Poor Law Offices, Leicester.

NOVEMBER 16.—**London.**—WOOD SLEEPERS.—The Crown Agents for the Colonies, acting on behalf of the Government of Ceylon, invite tenders for the supply of 50,600 Australian Jarrah wood sleepers. Forms of tender, etc., may be obtained on application at the office of the Crown Agents for the Colonies, Whitehall-gardens, London, S.W., between the hours of 10 a.m. and 4 p.m. (Saturdays 10 a.m. to 1 p.m.), on payment of a deposit of 1*l.*

NOVEMBER 19.—**Halifax.**—DESKS, SCREENS, ETC.—Oak desks, counters, screens, etc., required in the fitting-up of the new premises, Central-street and Silver-street, for the Halifax Equitable Benefit Building Society. Plans can be seen, and quantities obtained, at offices of Messrs. Richard Horsfall & Son, architects, 22a, Commercial-street, Halifax.

NOVEMBER 21.—**Guildford.**—FENCING.—The Guildford Guardians invite tenders for the provision and erection of about 105 lin. rods of oak close pale fencing around the boundaries of the land recently added to the Workhouse premises, Warren-road, Guildford. A specification, etc., can be seen, and a form of tender obtained, at the offices of Mr. Edward L. Lunn, architect and surveyor, 56, High-street, Guildford.

NOVEMBER 23.—**Middlesbrough.**—REMOVAL OF WRECK.—North-Eastern Railway invite tenders for the removal as a whole, or breaking-up and removal in parts, the sunker dredger *Tees*, at present lying at the west end of the entrance channel on the north side of the entrance to Middlesbrough Dock. Full particulars, etc., on personal application to Mr. T. M. Newell, Docks Engineer's Office, Dock Office, Hull.

NOVEMBER 23. — **Taunton.** — FENCE. — Taunton Borough Education Committee invite tenders for the supply and erection of a wrought-iron fence with stays, etc., around garden land adjoining the playground of North Town boys' school. Mr. George H. Kite, Town Clerk.

NOVEMBER 23.—**Wakefield.**—DESKS, CUPBOARDS, ETC.—The West Riding Education Committee invite tenders for the supply of dual desks, stock cupboards, and museum cupboards to elementary schools. Full particulars may be obtained on application to Mr. J. W. Horne, Education Department (Elementary Branch), County Hall, Wakefield.

NOVEMBER 24.—**Ilford.**—FURNISHING.—Ilford U.D.C. invite tenders for furnishing the library and hall at Seven Kings, Ilford. Drawings, etc., may be obtained at the office of Mr. Herbert Shaw, M.Inst.C.E., Engineer and Surveyor, Town Hall, Ilford, on payment of a deposit of 2*l.* 2*s.*

* NOVEMBER 24.—**West Ham.**—MOTOR FIRE-ESCAPE.—The West Ham B.C. invite tenders for supply of a motor fire-escape and hose tender. See advertisement in this issue for further particulars.

NOVEMBER 26.—**Nantwich.**—SCAVENGING.—Nantwich R.D.C. invite tenders to empty pails containing nightsoil and convey the same away every week, and to empty ashpits in the townships of Haslington, Shavington-cum-Gresty, Willaston, and Wistaston. Further particulars may be obtained from the Council's Inspector, Mr. John Storey, at his office in Pillory-street, Nantwich.

DECEMBER 1.—**Cardiff.**—ELECTRIC LIGHTING OF MUSEUM.—Tenders are invited for installing electric light in the Museum, Cardiff. Specification, etc., may be obtained upon application to the Town Clerk, City Hall, Cardiff.

NO DATE. — **Gloucester.** — PULLING DOWN.—Gloucestershire C.C. invite tenders for the purchase and pulling down and removing the material of certain premises on the south side of Westgate-street and the west side of Berkeley-street, adjoining the Shire Hall. Particulars may be obtained of the Consulting County Surveyor, Shire Hall, Gloucester.

NO DATE. — **Pencoed.**—LIGHTING.—Lighting plant for Pencoed Public Hall. Apply, Mr. W. A. Salter, Secretary, Pencoed.

PAINTING, etc.

NOVEMBER 14. — **Blaenavon, Rhymney, etc.** — PAINTING.—Repairing, papering, painting, etc., the Market Tavern Hotel, Blaenavon; Queen Victoria Hotel, Rhymney; Old Tanyard Inn, Merthyr; Royal Arms, Pontywain, for Messrs. A. Buchan & Co., Rhymney Brewery, Rhymney. Specifications, etc., may be seen at each of the above houses, or at office of Mr. T. Roderick, architect, Clifton-street, Aberdare.

NOVEMBER 17.—**Aldershot.**—PAINTING, ETC.—Aldershot U.D.C. invite tenders for executing certain repairs and painting works to their water vans and road scraper. Specifications can be seen, and any further information obtained, upon application at the office of the Surveyor, Mr. Fred C. Uren.

NOVEMBER 20. — **Windsor.** — PAINTING.—Berks and Bucks County Councils invite tenders for the painting of Albert Bridge, situated on the road between Old Windsor and Datchet over the Thames. Specification, etc., may be obtained from the County Surveyor of Berks, Cross-street, Reading.

NOVEMBER 21.—**Glasgow.**—PAINTING, ETC.—Glasgow Corporation invite offers for the cleaning and painter work required at Belvidere and Ruchill Hospitals. Specifications, etc., may be had on application at the Office of Public Works, City Chambers, 64, Cochrane-street.

NOVEMBER 21.—**York.**—PAINTING, ETC.—The dining hall at the North Riding Asylum, Clifton, York, to be painted and decorated. Tenders for the work to be sent in not later than November 21, addressed to the Committee of Visitors.

NOVEMBER 23. — **Gravesend.** — REDECORATING.—Gravesend Education Committee invite tenders for redecorations at King-street Schools. Specifications to be seen at the office of the Borough Surveyor at the Town Hall.

NO DATE.—**Blaby.**—PAINTING.—Blaby and Wigston Joint Hospital Committee invite tenders for the painting of corrugated-iron roofs of their hospital at Blaby. Also a separate tender for the painting of the sides and woodwork to the same buildings. Further particulars may be obtained from Dr. Anderson, of South Wigston, or at the Hospital.

ROADS, SANITARY, AND WATER WORKS.

NOVEMBER 14.—**Gosforth.**—MAIN DRAINAGE WORKS.—The Gosforth U.D.C. invite tenders for the construction of pipe sewers and storm-water drains in the Urban District of Gosforth. Names to the Engineer, Mr. Harry W. Taylor, A.M.Inst.C.E. (of the firm of Taylor, Wallin, & Taylor), of Cathedral-buildings, Newcastle-on-Tyne. Quantities and form of tender obtained on application to the Engineer, and on payment of 5*l.* 5*s.* deposit.

NOVEMBER 16.—**Altrincham.**—STREET WORKS.—Altrincham U.D.C. Highways Committee invite tenders for the making-up (including tar-macadam for the carriageway) of Beacousfield-road. Plans, etc., may be seen, and quantities, etc., obtained, on application to the Surveyor, Mr. H. E. Brown, Town Hall, Altrincham.

NOVEMBER 16.—**Bingley.**—EXCAVATING, ETC.—The Education Committee of the West Riding C.C. invite tenders for works of excavations and rough foundations, embankments, and drainage for Bingley Training College. Plans, etc., may be seen at the offices of Mr. J. Vickers-Edwards, County Architect, County Hall, Wakefield. A deposit of 1*l.* is required. Deposits must be posted addressed to the West Riding Treasurer, County Hall, Wakefield.

NOVEMBER 16. — **Cambuslang.** — HIGHWAY.—The District Committee of the Middle Ward of the County of Lanark invite tenders for the construction of a new highway—Myrtle-walk, Cambuslang. Copies of the specification, etc., may be obtained from the Road Surveyor, District Offices, Hamilton.

NOVEMBER 16.—**Halifax.**—SEWER.—The Highways Committee of the Halifax Corporation invite tenders for the construction of about 180 lin. yds. of 9-in. earthenware pipe sewer in Green-lane, off Rochdale-road, and about 200 lin. yds. of 12-in. earthenware pipe sewer in Burnley-road, at Cote Hill. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 5*l.* for each set of quantities.

NOVEMBER 16.—**Leeds.**—PAVING.—Leeds Highways Committee invite tenders for the paving and flagging of streets. Drawings may be seen at the City Engineer's office, Municipal-buildings. Forms of tender, etc., may be obtained, and copies of documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road.

NOVEMBER 16.—**Plymouth.**—MAKING-UP, ETC.—For making-up and completing streets and lanes. Plans, etc., may be seen at offices of Mr. James Paton, Borough Engineer, Municipal Offices, Plymouth.

NOVEMBER 16.—**Pontyrhydyrun.**—SEWER.—Llanfrechfa Upper U.D.C. invite tenders for providing and laying 318 yds. of 9-in. stoneware sewer, etc., at Pontyrhydyrun. Further particulars can be obtained from Mr. George Jones, Surveyor to the Council, Richmond-road, Pontnewydd.

NOVEMBER 16. — **Smithboro'.**—SEWER.—Monaghan R.D.C. invite tenders for laying a new sewer in the Village of Smithboro'. Specification can be seen at office of Mr. Samuel Mitchell, Clerk of Council, Board-room, Workhouse, Monaghan.

NOVEMBER 16.—**Withington.**—STREET WORKS.—Manchester Corporation Withington Committee invite tenders for draining, kerbing, flagging, and sett paving, etc., of Leslie-street, Withington; Seddon-street, Withington; Grantham-street, Withington; and Palmes-street, Withington. Plans, etc., can be seen, and a form of tender, etc., obtained, from the Surveyor to the Committee, Town Hall, West Didsbury.

NOVEMBER 17.—**Cheriton.**—ROAD WORKS.—Cheriton U.D.C. invite tenders for levelling, metalling, paving, kerbing, channelling, and making good Victoria-road, Cheriton. A deposit of 5*s.* must be paid on application for specification, etc. The plans, etc., may be seen at the Surveyor's Office, Cheriton.

NOVEMBER 17.—**Oystermouth.**—SEWER WORKS.—The Oystermouth U.D.C. invite tenders for the construction of sewers. The plans, etc., can be seen, and forms of tender, etc., obtained, at the Council Offices, Park-street, Oystermouth, on deposit of a cheque for 1*l.* 1*s.* in respect of each contract (two).

NOVEMBER 18. — **Greetland.** — FORMING STREET.—Greetland U.D.C. invite tenders for (1) setts, flags, and curb; (2) labour necessary in forming High-street, Cross-street, and Elizabeth-street, West Vale. Plans, etc., may be seen, and separate bills of quantities obtained, at offices of Messrs. Richard Horsfall & Son, surveyors, 22a, Commercial-street, Halifax.

NOVEMBER 18.—**Kingston-upon-Thames.**—ROAD WORKS.—The Corporation invite tenders for the re-making of a portion of Norbiton-avenue. Plan, etc., prepared by the Borough Surveyor, Mr. R. Hampton Clucas, can be seen at his office, Municipal Offices, where forms of tender can be obtained.

NOVEMBER 18.—**Oldham.**—SEWAGE WORKS.—Oldham Health Committee invite tenders for the construction of three circular concrete tanks, concrete carriers, alterations to existing tanks, and contingent works. Plans may be seen, and quantities obtained, at the Borough Surveyor's office.

NOVEMBER 19.—**Bournemouth.**—ROADMAKING, ETC.—Roadmaking and sewering on the Charminster Park Estate. Full particulars, forms of tender, etc., can be obtained of the Borough Engineer, Mr. F. W. Lacey, 1*l.* 1*s.* to be deposited in respect to the tender with the Borough Engineer and Surveyor.

NOVEMBER 19.—**Leeds.**—SEWERAGE WORKS.—Leeds Sewerage Committee invite tenders for the following sewerage works:—Gledhow Valley, Street-lane, Lidgett-lane. Drawings may be seen, and forms of tender, etc., obtained, on application to Mr. W. T. Lancashire, City Engineer, Municipal-buildings, Leeds, on payment of a deposit of 3*l.* 3*s.*

NOVEMBER 20.—**Bedford.**—DRAINAGE.—Bedford Guardians invite tenders from residents within the district of the Union for the carrying out of certain works of drainage at the Workhouse. Plans, etc., can be inspected at the Union Offices, 115, High-street, Bedford, and at the Workhouse. Further particulars can be obtained from Mr. Henry Young, architect and surveyor, Bedford.

NOVEMBER 20.—**Middleton.**—SEWERAGE.—Wharfedale R.D.C. invite tenders for about 2,900 lin. yds. of earthenware pipe sewers, etc., also for the necessary works in the construction of settling tanks, etc. Drawings, etc., may be seen, and forms of tender, etc., obtained, at the offices of the engineer, Mr. H. A. Johnson, M.Inst.C.E., 15, Exchange, Bradford, on payment of a deposit of 2*l.* 2*s.*

NOVEMBER 20.—**Oakham.**—SEWER.—The R.D.C. of Oakham invite tenders for pipe sewers, etc. Plans,

etc., may be seen on application at office of Mr. W. Batts, Clerk to the R.D.C. of Oakham, Catmose-street, Oakham, or to Mr. Charles W. Maudsley, civil engineer, South-street, Oakham (from whom the bills of quantities and other information may be obtained).

NOVEMBER 21.—**Ebbw Vale.**—ROAD WORKS, ETC.—Ebbw Vale U.D.C. invite tenders for:—(a) Supplying and laying about 220 lin yds. of kerb and channel of pennant stone at Ebbw Vale and Beaufort; (b) supplying and laying about 162 super. yds. of pennant stone pavement at Ebbw Vale; (c) supplying and erecting wooden steps between the upper and lower roads near the railway bridge at Victoria; (d) excavating about 150 cube yds. of earthwork, and building about 45 cube yds. of wall at Beaufort, and erecting about 100 yds. of post and wire fence for road widening; (e) providing and laying about 380 lin. yds. of 9-in. and 6-in. sewers, etc., at Beaufort. Plans, etc., may be seen, and forms of tender obtained, by appointment at the office of Mr. T. J. Thomas, Town Surveyor. A deposit of 10s., which must be in postal orders, will be required.

NOVEMBER 21. — **Pelling.** — ROAD WORKS. — The U.D.C. of Pelling invite tenders for the execution of certain works required in the formation and making good of a certain street at Pelling. Plans, etc., may be seen at the office of the Surveyor.

NOVEMBER 21. — **Formby.** — MAKING-UP. — Formby U.D.C. invite tenders for the making-up of Wicks-lane, from Freshfield-road to the L. and Y. Railway, with tar macadam. Form of quantities, etc., may be had on application to Mr. E. H. Bond, Clerk to the Council, Council Offices, Formby, on receipt of 10s. 6d. Conditions of tender may be seen on application to the Surveyor, Mr. A. W. Pattison.

NOVEMBER 21.—**Heysham.**—STREET WORKS.—Heysham U.D.C. invite tenders for sewering, levelling, paving, metalling, channelling, and making good that part of the Back-road lying between Marine-terrace and Grosvenor-terrace. Plans, etc., may be seen, and bills of quantities and form of tender obtained, on application to Mr. Henry Miller, Surveyor, Council Offices.

NOVEMBER 21.—**Teddington.**—ROAD WORKS.—The U.D.C. of Teddington invite tenders for making-up of King Edward's-grove and Princes-road (part of), Teddington. Plans, etc., may be seen, bills of quantities, etc., obtained (on payment of 2l. 2s.), on application to Mr. M. Hainsworth, Surveyor, Council Offices, Teddington.

* NOVEMBER 23. — **Beckenham.** — ROAD-MAKING.— The Beckenham U.D.C. invite tenders for making-up Perth, Picquet, and Witham roads. See advertisement in this issue for further particulars.

NOVEMBER 23. — **Broadstairs.** — LIMESTONE TAR PAVING.—Broadstairs and St. Peter's U.D.C. invite tenders for supplying and laying 1,255 super. yds., or thereabouts, of limestone tar paving, at Stone-road. Plan, etc., by the Town Surveyor, Mr. Howard Hurd, C.E., which can be seen at his office, and particulars and form of tender obtained.

NOVEMBER 23.—**Cheltenham.**—NEW OUTFALL SEWER.—Tenders are invited for the construction of a new brick and concrete outfall sewer about two miles in length. Upon a deposit of 3l. conditions of contract, etc., may be obtained from Mr. J. S. Pickering, M.Inst.C.E., Borough Engineer, Municipal Offices, Cheltenham.

NOVEMBER 23.—**Dawlish West.**—WATER SUPPLY.—The R.D.C. of Newton Abbot, Devon, invite tenders for the construction of a concrete storage reservoir, pumps, and engines for lifting water to same, and providing, jointing, and laying about 6,700 yds. lin. of 4-in. and 3-in. cast-iron water mains, etc. The drawings, etc., can be seen at the office of the Engineer, Mr. S. Dobell, Queen-street-chambers, Exeter. Copies of the quantities, etc., may be obtained from the Engineer upon payment of 3l. 3s.

NOVEMBER 23. — **Hounslow.** — PRIVATE STREET WORKS.—Heston and Isleworth U.D.C. invite tenders for (1) making-up Gordon-avenue, St. Margaret's; (2) Hospital-road, Hounslow. The plans, etc., may be seen, and bills of quantities and form of tender obtained, from Mr. J. G. Carey, the Engineer and Surveyor to the Council, Council House, Hounslow, on payment of 1l. 1s.

NOVEMBER 24. — **Beaconsfield.** — FOOTWAY. — The U.D.C. of Beaconsfield invite tenders for the constructionof a footway adjoining the Amersham-road, Beaconsfield, of about 330 yds. in length and 6 ft. in width. Plans, etc., may be seen at the office of the Surveyor to the Council, Mr. H. Sargeant, Wycombe-end, Beaconsfield.

NOVEMBER 24.—**Hitchin.**—WATERWORKS.—Hitchin U.D.C. invite tenders for waterworks, contracts A B C. Drawings, etc., by Messrs. W. R. & W. Phillips, civil engineers. Mr. Wm. Onslow Times, Clerk to the Council, U.D.C. Offices, Town Hall, Hitchin, Hertfordshire.

NOVEMBER 24. — **Leatherhead.** — MAKING-UP. — Leatherhead U.D.C. invite tenders for the making-up of Magazine-place. Form of tender obtained from the office of Mr. J. E. Smales, Surveyor, Council Offices, Leatherhead, upon payment of a deposit of 1l. 1s.

NOVEMBER 24.—**Leek.**—SEWERAGE.—The R.D.C. of Leek invite tenders for carrying out works of sewerage at Ball Green, Norton-in-the-Moors. Plan, etc., may be seen at the Union Offices, Russell-street, Leek.

NOVEMBER 24.—**Southampton.**—ASPHALT PAVING.—The Corporation invite tenders for laying asphalt paving in the roadway of the Strand. Plan, etc., may be inspected, and form of tender obtained, at the Borough Engineer's Office upon production of the Borough Treasurer's receipt for a deposit of 1l. 1s.

NOVEMBER 25.—**Birmingham.**—IMPROVEMENT OF THE RIVER REA AT SALTLEY.—Contract No. 7.—The Public Works Committee invite tenders for the construction of flood works. The plans, etc., may be seen, and the specification of works, etc., obtained, at office of Mr. Henry R. Stilgoe, M.Inst.C.E., City Engineer and Surveyor, Council House, Birmingham, on the deposit of the sum of 5l.

* NOVEMBER 25.—**Hammersmith.**—MAKING-UP AND PAVING.—The Hammersmith B.C. invites tenders for making-up and paving part of Emlyn-road. See advertisement in this issue for further particulars.

NOVEMBER 25. — **Peterborough.** — DOGSTHORPE, GARTON END, AND NEWARK WATER SUPPLY.—The R.D.C. of Peterborough invite tenders for the providing and laying of about 500 yds. of 5-in., 1,150 yds. of 4-in., and 3,400 yds. of 3-in. cast-iron pipes within the Parish of Peterborough Without. The general conditions, etc., may be seen at office of Mr. J. W. Buckle, Clerk, Priestgate, Peterborough, and copies of the quantities may be obtained on depositing the sum of 1l. 1s.

NOVEMBER 25.—**Wood Green.**—PRIVATE STREET IMPROVEMENT.—The Wood Green U.D.C. invite tenders for the making-up of:—(1) Dunbar-road (Section I.); (2) Ampthill-road; (3) passageway at rear of 103-133, High-road; (4) Alexandra Park-road (Section III.); and (5) Woodside-road (Section III.). The plans, etc., may be seen, and bills of quantities obtained, on application to the Surveyor, at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1l. 1s.

NOVEMBER 27. — **Acton.** — SEWER.—The U.D.C. of Acton invite tenders for the construction of ¼ mile of large main sewer. Tender and form, etc., can be obtained, and the drawings inspected, at the office of Sir Alex. Binnie & Sons, 9, Great George-street, Westminster, on payment of 2l.

NOVEMBER 27.—**Amesbury.**—DRAINAGE.—Amesbury R.D.C. invite tenders for constructing a new system of drainage at the Workhouse, Amesbury, Wilts. The plans, etc., can be inspected at the office of the Engineer, Mr. W. H. Stanley, A.M.Inst.C.E., Market House-chambers, Trowbridge. A copy of the bill of quantities can be obtained of Engineer on receipt of the sum of 1l. 1s.

NOVEMBER 28.—**East Grinstead.**—DRAINAGE.—East Grinstead U.D.C. invite tenders for:—No. 1.—Supplying 5-in. cast-iron socket pipes (about 1,600 yds.); (2) supplying and erecting two sets gas engines and pumps; (3) laying pumping main (1,600 yds.) and sewer (250 yds.); (4) building engine-house, etc. Plans, etc., may be seen, and forms of tender obtained, from Mr. W. E. Wollam, Engineer and Surveyor to the Council, Council Offices, London-road, East Grinstead, on depositing postal order value 1l.

NOVEMBER 30.—**Penge.**—PRIVATE STREET WORKS.—The U.D.C. of Penge invite tenders for private street works in Cottingham and Torr roads. Plans, etc., may be seen, and copies of the bills of quantities obtained, on application to Mr. Herbert William Longdin, Surveyor, Town Hall, Anerley, S.E., on payment of 2l. 2s.

NOVEMBER 30.—**Willesborough.**—DRAINAGE.—East Ashford Guardians invite tenders for carrying out certain works of drainage at the Workhouse, Willesborough. Plan, etc., can be seen at the Workhouse. Bills of quantities will be supplied on depositing the sum of 1l. Mr. Horace Hamilton, Clerk, Ashford.

DECEMBER 1. — **Gravesend.** — SEWERS. — Gravesend T.C. invite tenders for the construction of surface-water sewers within the Borough. Plans, etc., may be seen at, and bills of quantities, etc., may be obtained from, the Borough Surveyor's Office, Town Hall, Gravesend.

STONES, MATERIAL, AND STORES.

NOVEMBER 16.—**Bristol.**—STORES.—The Sanitary and Improvement Committee of the Corporation invite tenders for the supply of stores and tools. Specifications, etc., may be obtained at the offices of the City Engineer, 63, Queen-square, on payment of 10s.

NOVEMBER 16.—**Edinburgh.**—PIPES.—Edinburgh and District Water Trust invite tenders for supplying a quantity of cast-iron pipes, and about 2½ tons of special castings. The drawings may be seen, and copies of specifications, etc., may be obtained, at the Superintendent's office, No. 12, St. Giles-street, Edinburgh.

NOVEMBER 16.—**London.**—STORES.—The Agent-General for the Cape of Good Hope invites tenders for the supply of fishplates, steel, for 60-lb. section rails. Forms of tender, etc., may be obtained on application at the office of the Agent-General, 100, Victoria-street, London, S.W.

NOVEMBER 17. — **London.** — MATERIALS. — Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of (1) steel material; (2) rails and fishplates; (3) fishbolts and nuts; (4) bearing plates; (5) dog spikes. Forms, etc., can be obtained at offices of Mr. W. V. Constable, Secretary, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 21s. each (which will not be returned).

NOVEMBER 17. — **West Hartlepool.** — ROAD MATERIALS AND SEWER PIPES.—The Corporation invite tenders for the supply of Yorkshire and concrete kerbstone and flags, etc. Specifications and forms of tender can be obtained at office of Mr. Nelson F. Dennis, A.M.Inst.C.E., Borough Engineer and Surveyor.

NOVEMBER 18. — **Birmingham.** — RETORTS AND RETORT MATERIAL.—The Gas Committee invite tenders for the supply of firebrick material and fireclay. Forms of tender may be obtained on application to Mr. G. Hampton Barber, Secretary, Council House, Birmingham. Deposit of 5s. required.

NOVEMBER 18. — **Camberwell.** — GRANITE SPALLS.— The Guardians of the Poor of the Parish of St. Giles, Camberwell, invite tenders for the supply of 200 yds. of granite spalls, to be delivered at their Workhouse, Gordon-road, Peckham. Forms of tender, etc., may be obtained upon application to Mr. Charles S. Stevens, Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

NOVEMBER 18. — **Chorley.** — DISINFECTANTS. — The Chorley Corporation invite tenders for twelve months' supply of disinfecting liquid from January 1 next. Forms of tender may be obtained from Mr. Jno. Mills, Town Clerk, Town Hall, Chorley.

NOVEMBER 18. — **Manchester.** — MATERIALS.—The Cleansing Committee of the Manchester Corporation invite tenders for supplies. Specifications may be obtained from Mr. R. Williamson, Superintendent of the Cleansing Department, Town Hall, Manchester.

NOVEMBER 18.—**Woodstock.**—GRANITE, ETC.—The R.D.C. of Woodstock invite tenders for the supply of stone. Forms of tender can be obtained on application at office of Mr. A. G. Higgs, Clerk to the District Council, Woodstock.

NOVEMBER 19.—**Chatham.**—ANNUAL CONTRACTS.—The T.C. invite tenders for the supply of goods and materials. Specifications, etc., can be obtained, and samples seen on application, at the Borough Surveyor's Office, Town Hall, Chatham.

NOVEMBER 19. — **Deal.** — GRANITE.—The Corporation of Deal invite tenders for the supply of Guernsey granite. Specification, etc., to be had from Mr. Thos. C. Golder, Borough Engineer and Surveyor, 23, Queen-street, Deal.

NOVEMBER 19.—**Wakefield.**—STORES.—The Wakefield and District Light Railway Company invite tenders for the supply of the various classes of stores used in tramway work. Particulars of schedules may be obtained at the Central Office, Belle Isle, Wakefield. A charge of 1s. (which is not returnable) is made for schedules in duplicate.

NOVEMBER 20.—**Liverpool.**—STORES.—The Cheshire Lines Committee invite tenders for the supply during the year 1909 of stores and materials. Specifications, etc., can be obtained upon application to Mr. S. Saxon Barton, Stores Superintendent, Cheshire Lines, Warrington.

NOVEMBER 21. — **Chorley.** — STEEL TUBING.—Chorley Corporation invite tenders for about 78 lin. yds. of steel tubing. Specification and further particulars may be had from the Borough Surveyor.

NOVEMBER 21. — **Pelling.** — MATERIALS.—The U.D.C. invite tenders for the supply of materials, etc. Form may be obtained from the Surveyor, or will be sent on receipt of stamped addressed envelope.

NOVEMBER 21. — **Handsworth.** — MATERIALS.—The U.D.C. invite tenders for supplying goods and materials during the year ending December 31, 1909. Conditions of contract, etc., may be seen, and forms of tender obtained, on application to the Surveyor, at the Council House, Handsworth.

NOVEMBER 21. — **Manchester.** — NON-CONDUCTING COVERING.—Manchester Corporation Waterworks Committee invite tenders for supplying and fixing non-conducting covering for steam boilers, steam pipes, etc., at their new hydraulic pumping-station, Water-street, Manchester. Specifications, etc., may be obtained upon application to the Secretary, Waterworks Offices, Town Hall.

NOVEMBER 21. — **Swansea.** — STORES, ETC.—Swansea Harbour Trustees invite tenders for the supply of iron, castings, chains, timber, oils, ironmongery, ship chandlery, and general stores for twelve months. Forms of tenders, etc., may be obtained on application to the Engineer, at the Harbour Office.

NOVEMBER 21. — **Ystradgynlais.** — PIPES. — The R.D.C. invite tenders for the supply and delivery at Ystradgynlais Station of about 34 tons of 3-in. cast-iron pipes and special castings. Specification, etc., may be obtained from Mr. S. A. Bell, engineer, Herbert-street, Pontardawe, upon receipt of a cheque for 2l. 2s.

NOVEMBER 23.—**Aberdeen.**—STORES.—The Directors of the Great North of Scotland Railway Company invite tenders for the supply of stores. Forms of tender can be obtained from the Stores' Superintendent, 80, Guild-street, Aberdeen, on payment of 1s. for each form.

NOVEMBER 23. — **Doncaster.** — STORES.—The Great Northern Railway Company Directors invite tenders for the supply of certain new and the purchase of old stores for twelve months from January 1 next. A list of the contracts, and separate forms of tender for each contract, may be obtained upon application to Mr. Weeks, the Stores Superintendent, Doncaster.

NOVEMBER 23.—**Eastry.**—PAINTER'S MATERIALS, ETC. —Tenders are invited for the supply of painter's materials and engineer's fittings. Particulars etc., can be obtained on application to the Master, Union Workhouse, Eastry, S.O., Kent.

NOVEMBER 23.—**Sevenoaks.**—ROAD METAL AND GRAVEL.—Sevenoaks U.D.C. invite tenders for 1,880 yds. of clean local stone, and 60 yds. of gravel. Specifications, etc., may be obtained of Mr. Samuel Towlson, A.M.Inst.C.E., Surveyor to the Council, Argyle-road, Sevenoaks.

NOVEMBER 24.—**Barry.**—STORES.—The Barry Railway Company invite tenders for the supply of general stores and materials. Specifications, etc., may be obtained from Mr. E. T. Lawrence, Secretary, Company's Offices, Barry Docks.

NOVEMBER 24. — **Bootle.** — PAVING MATERIALS.—The Corporation of Bootle invite tenders for the supply of granite paving materials. Forms of tender may be obtained at the office of Mr. R. J. Wolfenden, A.M.Inst.C.E., Borough Engineer, Town Hall.

NOVEMBER 24.—**West Ham.**—MOTOR FIRE-ESCAPE AND HOSE.—The B.C. invite tenders for the supply of a motor fire-escape and hose tender. Specification, etc., may be obtained at the office of Mr. John G. Morley, Borough Engineer, Town Hall, West Ham, E., upon payment of 1l.

NOVEMBER 27. — **Cowes.** — CAST-IRON PIPES.—Cowes U.D.C. invite tenders for the supply of about 1,500 lin. yds. of 4-in. cast-iron spigot and socket pipes, also for certain valves and hydrants. Specification, etc., may be obtained from Mr. John W. Webster, Surveyor and Water Engineer to the Council.

NOVEMBER 30. — **Enniskillen.** — GOODS. — Sligo, Leitrim, and Northern Counties Railway invite tenders for goods required for the year 1909. Mr. S. B. Humphreys, Secretary and General Manager, Chief Offices, Enniskillen.

NOVEMBER 30. — **St. Marylebone.** — WORKS AND MATERIALS.—The Borough Council invite tenders for works and materials for one year. Forms, together with further particulars, may be obtained on application at the Town Hall, Marylebone-lane, Oxford-street, W.

DECEMBER 2.—**Dublin.**—MATERIALS.—The Directors of the City of Dublin Steam Packet Company invite tenders for the supply of brass and copper work, canvas, cordage, iron castings, paints, timber, etc. Specifications can be seen at the Company's Office, 9, Regent-road, Liverpool.

DECEMBER 12.—**Kent.**—ROAD MATERIAL.—Kent C.C. Bridges and Roads Committee invite tenders for the supply of materials. Specification, etc., can be obtained upon application to the County Surveyor, Maidstone.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*VISITING TEACHER OF BUILDERS' QUANTITIES	London County Council	See advertisement in this issue	Nov. 20

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*MACHINERY AND MATERIALS OF BUILDINGS, WESTMINSTER—On the Premises.....	Fuller, Horsey, Sons, & Cassell	Nov. 19
*FREEHOLD BUILDING LAND, BECKENHAM—At the Mart	Stimson & Sons.....	do.
*FREEHOLD BUILDING SITES, PECKHAM—At the Mart.....	Stimson & Sons.....	do.
*FREEHOLD SITE, PECKHAM—At the Mart	Stimson & Sons.....	do.
*FREEHOLD BUILDING LAND, PURLEY, SURREY—At the Mart	Stimson & Sons.....	do.
*BUILDING SITE, STRAND—At the Mart.....	H. Chapman & Co.	Nov. 25
*FREEHOLD SITE, TOTTENHAM—At the Mart	Douglas Young & Co.....	do.
*FREEHOLD PROPERTIES, STONE, NEAR DARTFORD—At the Mart.....	Jenkinson, Brinsley, & Jenkinson.....	Nov. 26

PATENTS—*Continued from page 540.*

having inclined sides furnished with converging or converging and diverging passages and orifices in the bottom of the grate, and a slide for controlling the same.

24,200 of 1907.—G. GAGLIO and L. VILLANI: *Electric Switches or Switch Operating Devices.*

This relates to an electric time-switch operating mechanism of the type wherein a sand-glass or the like is, by means of special devices, brought into the circuit-closing position, and remains in the same until the sand has passed from the upper portion of the hollow vessel into the bottom portion of the same. A time-switch device is provided in which, for the purpose of turning the sand-glass, there is arranged a cam disc mounted on the spindle of the same, and having an alternate convex or circumferential and concave shape so that each convex portion, forming a surface of engagement for the driving part, is followed by a concave portion or recess which, in combination with the driving part, takes up the momentum of the sand-glass, when passing into the circuit-closing position, and prevents it from passing beyond the said circuit-closing position.

24,294 of 1907.—G. W. MASCORD and T. A. E. BLAKE: *Electric Bells.*

This relates to electric bells, and particularly to continuous-ringing bells of the kind in which the make and break of the circuit through the solenoid are positively effected by the core, so that the danger of the switch not acting properly is minimised, and which may be worked on any desired source of potential and more particularly high-voltage currents. According to the invention the electric solenoid is provided with a core of wrought-iron or other suitable magnetically permeable material, and this core is connected to one end of a pivoted arm, to the other end of which is attached a member connected to the switch mechanism in such a manner that, when the core aforesaid is drawn into the solenoid by the action of the current passing therethrough, the electric circuit through the solenoid is broken, while, upon the core falling by reason of its weight, the circuit is again completed.

28,717 of 1907.—E. J. DOBBINS: *Glass for Windows and the like.*

This relates to a light projecting glass having on its one side a series of prism bars, and on its other side a series of concave channels or flutes, the meeting edges of which form angular ridges. Each of the prism bars has a plane face and an upper face formed of a plurality of convex lens-like projections. The concave channels or flutes on the other side of the glass are formed at substantially right angles to the prism bars, the central lines of the convex lenses of the prism bars preferably being made to coincide with the ridges or meeting edges of the concave channels or flutes arranged at substantially right angles to said prism bars.

25 of 1908.—W. H. JEFFERY.—*Steam Trap.*

This relates to the combination, with an expansion tube fixed at one end and free at the other, of a trap body provided with a chamber having a dip piece thereon, such dip piece projecting below the lower edge of the expansion tube, said chamber communicating with a valve and valve chamber provided with escape apertures or outlets. The valve has its spindle in engagement with a lever, said lever being pivoted below the spindle and above bearing points engaging adjustable washers or the like mounted on a spindle or stud attached to the strap body.

535 of 1908.—F. W. MELLOWES: *Roof Glazing.*

This relates to the method of making a shoe for securing the lower end of a glazing bar. The shoe is stamped from sheet metal, and is at one end flat and conveniently forked. Two ridges or projections or the like are formed along its surface at a distance apart corresponding to the width of the glazing bar. The other end of the shoe is preferably of less width, and is turned upwards to provide a support for the end of the glazing bar. The extreme end of the shoe is bent approximately parallel to the broad end or base, and serves to prevent the glazing bar from being lifted upwards.

575 of 1908.—H. W. DE STUCKLÉ: *Production of Zinc Pigments or Mixtures Containing Zinc Sulphide.*

This relates to a process for manufacturing light and waterproof sulphide of zinc or a mixture of sulphide of zinc with other pigments, consisting in expelling part of the hydrate water from sulphide of zinc obtained by precipitation or from mixed paint obtained either from precipitated sulphide of zinc, by subsequent mixing with other pigments, or by precipitation from alkaline zinc lyes. The hydrate water is expelled to such an extent that at least five molecules of sulphide of zinc are present for one molecule of hydrate water. The hydrate water is partly expelled by heating.

939 of 1908.—C. ROOK: *Flues of Kitchen Ranges and the like.*

This relates to the application to cooking ranges with arched boilers of the combination of a bed-plate with a rectangular opening, and with perforations tapering in section, from the under side, with an inclined chute, comprising a flat, inclined base and triangular sides at right angles thereto, a door swung on lateral pivots projecting from the said door within open slots in the said sides with an actuating push-rod engaging with the upper part of the said door, or a lug or eye thereon, the said rod having its inner end supported at the front of the range and being furnished with a manipulating knob or eye, the said bed-plate and chute being wholly or partially recessed in the setting of the boiler, and the said chute communicating by its upper orifice with the boiler flue and rear flue, and by its lower orifice with the ashpit.

2,347 of 1908.—H. ASHTON: *Metallic Fencing.*

This relates to metallic fencing, which is made up of a series of component and separable bars or members of an angular or irregular section, and consists in securing said bars in position by providing one end of same of a helical formation which, by its rotation, is screwed into the part to which the bars are to be secured, and the whole of these said bars being locked together and prevented from turning by a coupling bar having holes which are passed over their ends.

2,358 of 1908.—J. WATT: *Folding Gates.*

This relates to a folding gate, comprising a spring-controlled lever, pivoted on one vertical member of the (picket or stile) gate, expanding diagonally and operatively connected to a second, and relatively moving vertical member (picket or stile). A pair of levers may be pivoted upon one vertical member (picket or stile) of the gate, expanding oppositely diagonally, and operatively connected to a second and relatively moving member (picket or stile), and a spring in tension between their free and lower ends. A roller or rollers are provided upon the end or ends of the lever or levers bearing upon a guideway or guideways upon the vertical member of the gate other than that upon which the lever or levers is mounted.

3,811 of 1908.—J. BOOTH and R. J. SIMPSON: *Down Pipes and Connexions of Gas Pendants, Gas Chandeliers, Hall Lamps, and other suspended Gas Lamps.*

This relates to chain-like down piping for gas and like fittings, formed of two or more lengths of wave-like or bent tubing, and consists in soldering or otherwise securing the tubes together, edge to edge. And in combination with down pipes of the kind described, couplings for connecting the tubes of the said down tubes to the end portions of the fitting, having both internal and external screw threads, the said threads being opposite—that is to say, one right-handed and the other left-handed.

5,099 of 1908.—A. P. LUNDBERG, G. C. LUNDBERG, and P. A. LUNDBERG: *Electric Switches.*

This relates to the insulation of electric switches, and consists in forming the current-carrying member as a shallow box, open on one side, or a shallow recess and forming the bottom or rear wall of this box or recess with a hole through which a part of the non-current-carrying member of the switch is passed, said part being held central, within said hole, so as to prevent contact between the current and non-current-carrying members by a centring device which fits on said part and within said box or recess and is insulated from said box or recess by mica, with which said box or recess is lined.

6,076 of 1908.—G. GLENN: *A Fuel Economiser and Smoke Consumer for Stoves, Domestic Fireplaces, and the like.*

This relates to a fuel economiser formed of two fireclay half spheres, the flat faces of which are brought into intimate contact with one another (with or without the aid of a cementing medium) under pressure to form a perfect sphere, the sphere thus formed and dried being kilned in the usual manner, but after the combustion chambers have been formed therein.

7,127 of 1908.—C. VOLK: *Manufacture of Wall and Roofing Slabs, Doors, Vessels, and the like.*

This relates to a method of making rigid resistant objects such as slabs, for walls and roofs, doors, and vessels, and other objects which have the same properties as such articles made of reinforced concrete or artificial stone, but are essentially lighter, wherein a plate or several plates put together of some building material lighter than concrete or artificial stone—for example, cork, stone, or wood—is or are provided on each surface with a coating of metal or of wires of any cross-section, whereupon a layer of adhesive cement or other suitable hardening building material is applied. According to a modification of the method, in which an insertion of wood boards is used, the wires are laid across the grain of the wood so as to prevent the splitting, shrinking, or warping of the wooden insertion after applying the hardening material; and, according to another modification, when doors are being made, the edges, where the hinges, locks, or the like are attached, are left free from coating or only so far covered with artificial stone that the cavities, necessary for the hinges and the rabbets of the door, can be made in the wood insertion piece.

9,464 of 1908.—B. WEITZENHOFFER: *Trap for the Waste Pipes of Baths and the like.*

This relates to a trap or device for preventing the escape of objectionable gases. In the trap or device according to this invention the space containing the sealing water is formed as a separate vessel, which is arranged in a siphon box which can be closed by means of a hinged or removable cover, so that, on the one hand, the vessel is always filled with sealing water, notwithstanding suction, while, on the other hand, the seal may be made of larger size than that heretofore usually employed. As the seal water vessel can easily be lifted out of the siphon box, the seal can be quite easily cleansed by removing or turning up the cover, and the pipe joining the box can, in like manner, be cleaned from the side to which the cover is attached. The siphon box itself serves as a sediment collector, and thus ensures the keeping open of the pipe. Into the vessel containing the sealing water there projects a funnel co-axial with it, and the water always flows over into the annular space formed between the vessel and the funnel. The funnel may be made either integral with the cover or it may be screwed to the vessel containing the water seal. When the latter arrangement is adopted this vessel does not rest on the bottom of the box, and it is provided with lateral overflow apertures. The seal is either made of zinc casting or of cast iron; if of the latter, the junction pipe must be provided with a screw thread by means of which a piece of piping made of a weldable material can be screwed between the box and the pipe.

17,512 of 1908.—W. SCHMAHL and A. P. HENDERSON: *Electrical Conduit Junction Boxes for Electrical Outlet Fittings, such as Switches, Wall Plugs, and the like.*

This relates to a type of conduit junction box in which electrical outlet fittings, such as switches, plugs, pushes, and the like, are adjustably fixed, so as to admit of vertical or horizontal adjustment of the flush mounting plate, which is held to the outlet fittings by the use of fixed bushings, and, being fixed with hold-down screws in this manner, perfect alignment with surrounding decorations or structures is secured.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 30.—By N. EASTON & SON (at Hull).
Ganstead, Yorks.—The Hall Estate, 150 acres, f., y.r. 170*l*. £4,950

By HARRY BALL (at Bedford).
Bedford, Beds.—20 and 22, Newnham-st. (s.), f., y.r. 32*l*. 16s. 325
27 and 29, Greyfriars-walk, f., w.r. 16*l*. 16s. ... 150

October 31.—By STAFFORD & ROGERS, LTD. (at Bedford).
Marston Moretaine, Beds.—Three enclosures of pasture land, 35½ acres, f., y.r. 22*l*. 975

November 2.—By BEALE & CAPPS.
Paddington.—41, Craven-rd. (s.), u.t. 29 yrs., g.r. 10*l*., y.r. 115*l*. 910
Dulwich.—51, Carnac-st., f., w.r. 33*l*. 16s. 360

By JOHN BOTT & SONS.
Bermondsey.—145 and 147, Abbey-st., f., w.r. 76*l*. 14s. 500
Herne Hill.—184 and 186, Mayall-rd., u.t. 60 yrs., g.r. 11*l*., w.r. 72*l*. 16s. 310

By HIGGS, MUMBY, & CO.
Stoke Newington.—1 to 11 (odd), Reedholm-rd., u.t. 51½ yrs., g.r. 30*l*., y.r. 174*l*. 1,220
Islington.—2, Alfred-st., u.t. 17½ yrs., g.r. 3*l*. 3s., y.r. 39*l*. 130

By WALLER & KING (at Southampton).
Freemantle, Hants.—91 and 93, Park-rd., f., y.r. 28*l*. 16s. 410
67, Queenstown-rd., f., y.r. 16*l*. 330

November 2.—By DRIVER, JONAS, & CO. (at Fleet).
Fleet, Hants.—Fleet-road, plot of building land, f. 220
Albert-st., residence, f., w.r. 17*l*. 255

November 3.—By MIDDLETON & CRACKNELL.
Hampstead.—2, Heath-st. (s), f., y.r. 65*l*. 1,000

By WILSON & GRAY.
Clapton.—244, Evering-rd., u.t. 65½ yrs., g.r. 11*l*., y.r. 60*l*. 450

November 4.—By JOHN P. DICKINS & SONS.
Bromley.—Bloomsbury-st., f.g.r. 6*l*. 10s., reversion in 34 yrs. 210
25, Bloomsbury-st., f., w.r. 23*l*. 8s. 225
Stepney.—64, St. Dunstan's-rd., u.t. 44 yrs., g.r. 3*l*. 10s., w.r. 23*l*. 8s. 105

By HATCH & HATCH.
Catford.—24, Honley-rd., u.t. 64 yrs., g.r. 6*l*. 10s., y.r. 42*l*. 430

By SALTER, REX, & CO.
Kentish Town.—Prince of Wales-rd., l.g. rents 15*l*. 15s., u.t. 83 yrs., g.r. 2*l*. 200

By STOKES & PINDER.
Marylebone.—41 to 50, Christchurch-residences, u.t. 48½ yrs., g.r. 15*l*., w.r. 178*l*. 670

By WYATT & SON (at Chichester).
Chichester, Sussex.—26, 27, and 28, Kingsham-rd., f., w.r. 40*l*. 6s. 450
1 and 2, Oakland-la., 1 acre, l. 180

By ALEXANDER, DANIEL, & CO. (at Dawlish).
Dawlish, Devon.—Park-st., f.g.r. 0*l*. 232
Marine-parade.—Southcliffe House, f., y.r. 65*l*. 850

November 5.—By NEWBON, SHEPHARD, & EDWARDS.
Islington.—Popham-st., l.g.r. 18*l*. 10s., reversion in 11 yrs. £750
6, 7, and 8, Popham-st., l., w.r. 84*l*. 10s. 520
1 and 1A, Popham-rd., l., w.r. 83*l*. 4s. 550
Popham-rd., freehold land, y.r. 20*l*. 310
10, Ockenden-rd., u.t. 32½ yrs., g.r. 6*l*. 8s., y.r. 42*l*. 265
95, Packington-st., u.t. 28 yrs., g.r. 7*l*. 7s., y.r. 50*l*. 250
47, Florence-st., u.t. 42 yrs., g.r. 8*l*., e.r. 40*l*. 225
Hampstead.—49, South-hill-pk., f., e.r. 55*l*. ... 500
Canonbury.—46, Canonbury-pk. South, and l.g.r. 10*l*., u.t. 27½ yrs., g.r. 17*l*. 7s., e.r. 62*l*. 295

By STIMSON & SONS.
Peckham.—39 to 45 (odd), Camden-gr. North, f., w.r. 111*l*. 16s. 950
Wandsworth.—31, Eglantine-rd., f., y.r. 45*l*. .. 670
Mill Hill.—22, Daws-la. (s.), f., y.r. 40*l*. 570
Battersea.—13 and 15, Lockington-rd., u.t. 54 yrs., g.r. 10*l*., w.r. 94*l*. 13s. 360
Brixton.—7 and 8, Western-rd., u.t. 14 yrs., g.r. 10*l*. y.r. 76*l*. 240
Southwark.—2 to 10 (even), Hayles-st., u.t. 9 and 4½ yrs., g.r. 22*l*., w.r. 146*l*. 18s. 200
Brixton.—23 and 25, Josephine-av., u.t. 57 yrs., g.r. 18*l*. 9s., w.r. 147*l*. 10s. 540
Norwood.—126, Birchanger-rd., u.t. 58 yrs., g.r. 6*l*. 5s., y.r. 32*l*. 200
Camberwell.—284, Camberwell New-rd., u.t. 23 yrs., g.r. 13*l*., e.r. 45*l*. 200

By RICHARDSON & TROTTER (at York).
Elvington, Yorks.—The White House Farm, 154 acres, f., y.r. 134*l*. 16s. 2,900

November 6.—By VINCENT S. LEIGH.
Clapton.—Glenarm-rd., u.t. 47½ yrs., g.r. 5*l*., w.r. 47*l*. 18s. 260

By EDWARD WOOD.
Limehouse.—41, Repton-st. (s.), e., w.r. 23*l*. 12s. 205

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; h.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	6	0	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	" delivered
Flettons	1	5	0	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Bnabon Facing	5	0	0	" " "
Best Blue Pressed Staffordshire	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays, Chamferred, Squints	15	10	0	" " "
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays, Chamferred, Squints	15	10	0	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	per 1000 less than best.

	£	s.	d.	
Thames and Pit Sand			6	6 per yard, delivered.
Thames Ballast			5	0 " "
Best Portland Cement			28	0 per ton, "
Best Ground Blue Lias Lime			19	0 " "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	£	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt			1	6½ per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt			1	8½ " "
PORTLAND STONE (30 ft. average)—				
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1		" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½		" "

STONE (*continued*).

Ancaster in blocks	1	10	per ft. cube, delld. rly. depôt.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	£	s.	d.	
Scappled random blocks	2	10		" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3		per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6		" "
3 in. sawn two sides slabs (random sizes)	0	11½		per ft. cube "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½		" "
1½ in. to 2 in. ditto, ditto	0	6		" "

HARD YORK—

Scappled random blocks	3	0		" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8		per ft. super. "
6 in. rubbed two sides ditto	3	0		" "
3 in. sawn two sides slabs (random sizes)	1	2		" "
2 in. self-faced random flags	0	5		" "

SLATES.

In.	In.	£	s.	d.	
20×10	best blue Bangor	13	2	6	per 1000 of 1330 at r.d.
20×12	" "	13	17	6	" "
20×10	first quality	13	0	0	" "
20×12	" "	13	15	0	" "
16×8	" "	7	5	0	" "
20×10	best blue Portmadoc	12	12	6	" "
16×8	" "	6	12	6	" "
20×10	best Eureka unfading green	15	17	6	" "
20×12	" "	18	7	6	" "
18×10	" "	13	5	0	" "
16×8	" "	10	5	0	" "
20×10	permanent green	11	12	6	" "
18×10	" "	9	12	6	" "
16×8	" "	6	12	6	" "

TILES.

		s.	d.	
Best plain red roofing tiles	4d	0		per 1000, at rly depôt.
Hip and Valley tiles		3	7	per doz. "
Best Broseley tiles		50	0	per 1000 "
Do. Ornamental tiles		53	6	" "
Hip and Valley tiles		4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)		57	6	per 1000 "
Do. Ornamental do.		60	0	" "
Hip tiles		4	0	per doz. "
Valley tiles		3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)		51	9	per 1000 "
Do. Ornamental do.		54	6	" "
Hip tiles		4	1	per doz. "
Valley tiles		3	8	" "
Best "Rosemary" brand plain tiles		42	0	per 1000 "
Best Ornamental tiles		50	0	" "
Hip tiles		4	0	per doz. "
Valley tiles		3	8	" "
Best "Hartshill" brand plain tiles, sand-faced		50	0	per 1000 "
Do. pressed		47	6	" "
Do. Ornamental do.		50	0	" "
Hip tiles		4	0	per doz. "
Valley tiles		3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles		42	6	per 1000 "
Hand-made sand-faced		45	0	" "
Hip tiles		4	0	per doz. "
Valley tiles		3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13	10	0	... 15	0	0
Deals: best 3 by 9	13	0	0	... 14	0	0
Battens: best 2½ in. by 7 in. and in., and 3 in. by 7 in. and 8 in.	11	0	0	... 12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	" "		
2 in. by 4 in. and 2 in. by 6 in.	9	0	0	... 10	0	0
2 in. by 4½ in. and 3 in. by 5 in.	8	10	0	... 9	10	0
Foreign Sawn Boards—1 in. and 1½ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		
Fir timber: best middling Dantzig or Memel (average specification)	At per load of 50 ft. 4	10	0	... 5	0	0
Seconds	4	0	0	... 4	10	0
Small timber (8 in. to 10 in.)	3	12	6	... 3	15	0
Small timber (6 in. to 8 in.)	3	0	0	... 3	10	0
Swedish balks	2	10	0	... 3	0	0
Pitch-pine timber (50 ft. average)	4	0	0	... 4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	... 25	0	0
3 in. by 9 in.	22	0	0	... 23	0	0
Battens, 2½ in. and 3 in. by 7 in.	16	10	0	... 18	0	0
Second yellow deals, 3 in. by 11 in.	18	10	0	... 20	0	0
" " 3 in. by 9 in.	17	10	0	... 19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	... 14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	12	10	0	... 13	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	... 12	0	0
Petersburg first yellow deals, 3 in. by 11 in.	21	0	0	... 22	10	0
Do. 3 in. by 9 in.	18	0	0	... 19	10	0
Battens	13	10	0	... 15	0	0

WOOD (continued).

JOINERS' WOOD (continued)—	At per standard. £ s. d.			£ s. d.
Petersburg second yellow deals, 3 in. by 11 in.	16 0 0	...		17 0 0
Do. 3 in. by 9 in.	14 10 0	...		16 0 0
Battens	11 0 0	...		12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	...		14 0 0
Do. 3 in. by 9 in.	12 10 0	...		14 0 0
Battens	10 0 0	...		11 0 0
White Sea and Petersburg—				
First white deals, 3 in. by 11 in.	14 10 0	...		15 10 0
" " 3 in. by 9 in.	13 10 0	...		14 10 0
Battens	11 0 0	...		12 0 0
Second white deals, 3in. by 11 in.	13 10 0	...		14 10 0
" " 3 in. by 9 in.	12 10 0	...		13 10 0
Battens	10 0 0	...		11 0 0
Pitch-pine: deals	18 0 0	...		21 0 0
Under 2 in. thick extra	0 10 0	...		1 0 0
Yellow pine—First, regular sizes	44 0 0	upwards.		
Oddments	32 0 0	"		
Seconds, regular sizes	33 0 0	"		
Oddments	28 0 0	"		
Kauri Pine—Planks, per ft. cube	0 3 6	...	0 5 0	
Dantzig and Stettin Oak Logs—				
Large, per ft. cube	0 3 0	...	0 3 9	
Small " "	0 2 6	...	0 2 6	
Wainscot Oak Logs, per ft. cube	0 5 6	...	0 6 0	
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	...	0 0 9½	
¼ in. do. do	0 0 7	...	—	
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	...	0 1 0	
Selected, Figury, per ft. super. as inch	0 1 6	...	0 2 6	
Dry Walnut, American, per ft. super. as inch	0 0 10	...	0 1 0	
Teak, per load	17 0 0	...	22 0 0	
American Whitewood Planks, per ft. cube	0 4 0	...	0 5 0	
Prepared Flooring, etc.—	Per square.			
1 in. by 7 in. yellow, planed and shot	0 13 6	...	0 17 0	
1 in. by 7 in. yellow, planed and matched	0 14 0	...	0 18 0	
1¼ in. by 7 in. yellow, planed and matched	0 16 0	...	1 0 0	
1 in. by 7 in. white, planed and shot	0 12 0	...	0 14 6	
1 in. by 7 in. white, planed and matched	0 13 6	...	0 15 0	
1¼ in. by 7 in. white, planed and matched	0 15 0	...	0 16 6	
⅝ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	...	0 13 6	
1 in. by 7 in. " "	0 14 0	...	0 18 0	
⅝ in. by 7 in. white " "	0 10 0	...	0 11 6	
1 in. by 7 in. " "	0 12 9	...	0 15 0	

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.			£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0	...		7 10 0
Compound Girders, ordinary sections	9 0 0	...		10 0 0
Steel Compound Stanchions	11 0 0	...		12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0	...		10 0 0
Flitch Plates	9 0 0	...		9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0	...		8 10 0

METALS.

IRON—	Per ton, in London. £ s. d.			£ s. d.
Common Bars	8 10 0	...		9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0	...		9 5 0
Staffordshire "Marked Bars"	10 10 0	...		—
Mild Steel Bars	8 15 0	...		9 5 0
Hoop Iron, basis price	9 5 0	...		9 10 0
" " Galvanised	17 0 0	...		—
("And upwards, according to size and gauge.)				
Sheet Iron Black—				
Ordinary sizes to 20 g.	9 15 0	...		—
" " 24 g.	10 15 0	...		—
" " 26 g.	12 5 0	...		—
Sheet Iron, Galvanised, flat, ordinary quality—				
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0	...		—
Ordinary sizes to 22 g. and 24 g.	15 10 0	...		—
" " 26 g.	16 10 0	...		—
Sheet Iron, Galvanised, flat, best quality—				
Ordinary sizes to 20 g.	18 0 0	...		—
" " 22 g. and 24 g.	18 10 0	...		—
" " 26 g.	20 0 0	...		—
Galvanised Corrugated Sheets—				
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0	...		—
" " 22 g. and 24 g.	14 15 0	...		—
" " 26 g.	16 5 0	...		—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 0 0	...		—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0	...		—
" " " 20 g.	15 0 0	...		—
Cut Nails, 3 in. to 6 in.	10 10 0	...	11 0 0	
(Under 3 in., usual trade extras.)				

LEAD, &c.	Per ton, in London. £ s. d.			£ s. d.
LEAD—Sheet, English, 3lb. and up.	17 5 0	...		—
Pipe in coils	17 15 0	...		—
Soil pipe	19 15 0	...		—
Compo pipe	20 15 0	...		—
ZINC—Sheet—				
Vieille Montagne ton	26 10 0	...		—
Silesian	26 5 0	...		—
COPPER—				
Strong Sheet per lb.	0 1 0	...		—
Thin "	0 1 1	...		—
Copper nails "	0 0 10	...		—
Copper wire "	0 0 10	...		—
BRASS—				
Strong Sheet "	0 0 11	...		—
Thin "	0 1 0	...		—
TIN—English Ingots "	0 1 4	...		—
SOLDER—Plumbers' "	0 0 6½	...		—
Tinmen's "	0 0 9	...		—
Blowpipe "	0 0 11	...		—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4½d. " "
Fluted Sheet, 15 oz.	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

¼ Hartley's	2½d. per ft. delivered.
⅛ "	2½d. " "
⅛ "	2½d. " "
Figured, Oxford Rolled, and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "
OTHER GLASS—	
"Arctic" Glass, white	3½d. " "
" " tinted	5d. " "
" " Ruby and opalescents	1s. " "

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 10½
" " in barrels	"	0 1 11
" " in drums	"	0 2 2
Boiled " in barrels	"	0 2 1
" " in drums	"	0 2 4
Turpentine in barrels	"	0 2 5
" in drums	"	0 2 8
Genuine Ground English White Lead	per ton	21 0 6
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

PUBLISHER'S NOTICES.

Tel. Tel., 6113 Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME XCIV. (January to June, 1908) was given as a supplement with July 18 last.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 1s. each.

THE NINETY-FOURTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under 4s. 6d.
Each additional line 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under 4s. 6d.
Each additional line (about ten words) 0s. 6d.

Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under 2s. 6d.
Each additional line (about ten words) 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have Replies addressed to the OFFICE, 4, CATHERINE ST., STRAND, W.C., free of charge. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { MINEPENCE EACH. By post (carefully packed) 1s.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us not later than 10 a.m. on Thursday. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcement of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100l., unless in some exceptional cases and for special reasons.]

* Denotes accepted. † Denotes provisionally accepted.

BURSLEM.—For the alteration to the premises in Wedgwood-place, to provide showroom and gas-collector's office, for the Gas Committee of the Corporation. Mr. Edward Jones, M.I.M.E., Gas Engineer and Manager, Longport:—

G. Sambrook	£240	T. W. Brindley	£220
H. Wardle	240	W. Grant & Sons, Burslem*	210
W. Cooke	221		

CAERPHILLY.—For constructing 370 yds. of 9-in. subsidiary sewer, etc., Nantycalch, for the Urban District Council. Mr. A. O. Harpur, Engineer and Surveyor, Council Offices, Cardiff-road, Caerphilly:—

S. Hewlett	£179 16 0	R. Webb & Son	£135 12 6
G. Rutter	172 2 4	W. J. Morgan	134 7 2
W. L. Meredith	165 0 0	W. Watkins	128 13 0
W. Morgan	143 13 4	L. R. Owen	127 16 6
J. Lewis	139 1 0	S. Strickland, Caerphilly*	106 19 0
A. G. Collins & Co.	135 14 9		

CAERPHILLY.—For 9-in. sewer-connexions from cesspools to main sewer, Beddan and Nantgarw roads, for the Urban District Council. Mr. A. O. Harpur, Engineer and Surveyor, Council Offices, Cardiff-road, Caerphilly:—

S. Hewlett	£121 1 4	R. Webb & Son	£83 17 0
G. Rutter	109 11 8	L. R. Owen	81 9 0
A. G. Collins & Co.	96 8 0	W. J. Morgan, Penyrheol, Caerphilly*	71 1 0
W. L. Meredith	92 13 6		
W. Watkins	89 15 0		

CAERPHILLY.—For 120 yds. of 9-in. sewer, etc., Energlyn, for the Urban District Council. Mr. A. O. Harpur, Engineer and Surveyor, Council Offices, Cardiff-road, Caerphilly:—

W. J. Morgan, Penyrheol* £32 0 0

CAVERSHAM.—For erecting a footbridge at Lower Caversham, for the Urban District Council. Mr. A. J. Smith, Surveyor, Gosbrook-street, Caversham:—

Coster & Son	£259 10	H. Hill	£197 0
F. T. Robinson	259 0	Collier & Catley, Reading*	196 0
F. Talbot	254 10		

CHISWICK.—New packing-room and sundry additions to the Royal Standard Laundry, Chiswick Park, W., for Mr. D. Wynter. Messrs. S. J. Reynolds & H. Hicks, architects, Reigate and Broadstairs. Quantities by Mr. J. Kennard, Croydon:—

A. Funnell & Co.	£5,100 0 0
W. Johnson & Co., Ltd.	4,812 0 0
D. W. Barker	4,795 0 0
E. J. Saunders & Co.	4,600 0 0
G. E. Wallis & Son, Ltd.	4,494 0 0
Holliday & Greenwood, Ltd., Brixton*	4,492 0 0

CINDERFORD.—For proposed new higher elementary school, Cinderford, for Gloucestershire Education Committee:—

E. J. Flewelling	£4,946 0 0
W. Bowers & Co.	4,909 10 0
A. S. Cooke	4,902 13 0
Bistcourt & Sons	4,730 0 0
T. Broad, Ltd.	4,669 0 0
R. W. Wilks & Son	4,568 0 0
J. Long & Sons, Ltd.	4,484 0 0
Walters & Sons	4,474 0 0
G. Dimery & Sons	4,455 12 10
W. Jones	4,399 0 0
Byard & Sons	4,375 0 0
E. Love	4,307 0 0
W. T. Nicholls	4,294 10 0
C. A. Hayes & Sons	4,247 0 0
Collins & Godfrey	4,242 0 0
Wooley & Son	4,223 13 6
N. Baxter & Sons	4,212 10 3
H. & C. Spackman	4,201 3 3
Turford & Southward	4,139 0 0
A. J. Colborne	4,099 0 0
W. Crane, Ltd.	3,960 15 0
C. Griffiths, Lye, near Stourbridge*	3,939 1 3

DARTMOUTH.—For extension of footpath at Higher Victoria-road, for the Corporation. Mr. W. Joyce, Borough Surveyor, Dartmouth:—

S. L. Clothier	£100 5 0	R. H. Watts	£74 15 0
A. E. Knight	78 10 0	J. Back, Dartmouth, Devon*	73 17 6
F. W. Gullett	79 9 3		
W. H. Broad	85 0 0		

DUDLEY.—For erecting new buildings, alterations, and additions at the fire-station, Priory-street, for the Watch Committee. Mr. J. Gammage, Borough Engineer and Surveyor, Town Hall, Dudley:—

S. A. Webb, Porter-street, Dudley* £334 0 0

ISLE OF SCILLY.—For building a house at St. Mary's, fitted throughout with acetylene gas, for Mr. E. Hopkins, Courtlands, East Moleesy. Mr. Herbert Ashman, architect, Rokeley, Coburg-road, Teddington:—

Triggs Bros.	£2,400 0 0	J. F. Ellis	£1,070 0 0
Walters & Barnets	1,501 6 6	J. R. Thompson & Sons	975 0 0
A. Curkeek	1,392 0 0	J. Woodcock, Isles of Scilly*	975 0 0
A. J. Trenoweth	1,325 0 0	J. Downham	925 0 0
Waring & Gillow	1,210 0 0		

CHISWICK.—For making-up Riverview-grove, Chiswick, for Chiswick Urban District Council. Mr. Edward Willis, Engineer and Surveyor, Engineer and Surveyor's Office, Town Hall, Chiswick, W.:—

—	With Victoria Stone.	With Croft.	With Excelsior.	With Atlas.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
F. G. Brummell	823 5 0	802 10 0	792 0 0	792 0 0
Champaine & Co.	908 12 4	888 15 8	878 7 4	886 6 0
J. & W. Drake	—	—	1,016 0 0	—
W. & C. French	837 0 7	816 3 11	805 15 7	810 19 9
J. Mowlem & Co., Ltd.‡	875 0 0	857 0 0	849 0 0	857 0 0
T. W. Pedrette	990 0 0	945 0 0	915 0 0	915 0 0
H. N. Rhodes, Chiswick*	720 15 0	642 12 6	606 3 4*	611 7 6
W. B. Rhodes	950 0 0	893 0 0	841 0 0	841 0 0

‡ These estimates include for use on the works of all ashes or other existing material now in the road.

EASTBOURNE.—For works in connexion with alterations and additions No. 1, Church-street, Eastbourne. Mr. Wm. Chapman Field, Borough Architect and Building Surveyor:—

J. Martin	£969	E. Reif	£908
Peerless, Dennis, & Co.	967	R. H. Stanbridge	830
T. Dunlop	927	M. Hookham*	793

[All of Eastbourne.]

EDINBURGH.—For work to be done in constructing a clear-water tank, settling tanks, filter and meter houses, and providing, laying, and jointing cast-iron pipes, with relative works at Fairmilehead, for the Edinburgh and District Water Trustees. Mr. W. A. Tait, C.E., 72a, George-street, Edinburgh, and 9, Victoria-street, S.W.:—

W. Dobson	£12,686 11 9
W. Black & Sons	12,466 6 3
A. Waddell & Son, Edinburgh*	12,075 19 11

(Twenty-three others varying in amount up to £21,375 11s. 1d.]

EPSOM.—For erecting an iron and glass verandah at the Workhouse Infirmary, for the Guardians. Mr. A. C. Williams, architect, 53, Doughty-street, W.C.:—

Mr. J. Ellis, Stanley Iron Works, George-street, Reading*	£312

HAMMERSMITH.—For additions and alterations to the West London Model Laundry, for Mr. J. Thompson. Messrs. S. J. Reynolds & H. Hicks, architects, Reigate and Broadstairs:—

W. Johnson & Co., Ltd.	£1,339	G. E. Wallis & Son, Ltd.	£1,199
F. G. Minter	1,326	E. A. Rooms & Co., Basinghall-street, E.C.*	1,163
Holliday & Greenwood, Ltd.	1,323		
J. Carmichael	1,212		

HARROGATE.—For private street works, Prospect-place, for the Corporation. Mr. F. Bagshaw, Borough Engineer and Surveyor:—

E. Long, 7, Forest-avenue, Starbeck, Harrogate*	£191

HAWKSHEAD.—For 450 yds. of sewerage, etc., for Ulverton Rural District Council. Mr. W. F. Y. Molineux, Engineer and Surveyor:—

W. Barrick	£121 0 0	T. & W. Dirkin	£47 12 6
P. Robinson	116 7 6	J. Airey	45 8 9
W. Fleming	96 2 0	G. Wilson	39 10 0
J. Thompson	58 17 6	Postlethwaite Bros., Hawkshead, Ambleside*	30 14 0
T. Sandford	51 10 0		
R. Shuttleworth	50 10 0		

[Engineer's estimate, £60. The tender of Messrs. Duckett & Sons for pipes was accepted.]

HIGH WYCOMBE.—For small villa London-road, High Wycombe, for Mr. A. E. Taplin. Messrs. Hooper & Nash, architects, Wycombe and Marlow:—

Carrick	£450 10 0
J. T. Harris	412 0 0
J. Nash & Sons	394 10 0
A. W. Morton & Sons	310 0 0
G. H. Gibson, Wycombe*	309 10 0

LITTLEHAMPTON.—For paving works, for the Urban District Council. Mr. H. Howard, F.S.I., Town Offices, Littlehampton. Quantities by Surveyor:—

W. G. Harbour	£1,139 14 5	Linfield & Sons	£816 14 2
W. Pearce	924 2 10	E. Hill	816 12 1
W. A. McKellar	923 0 0	E. G. Holland, High-street, Littlehampton*	816 0 0
Thacker & Co.	834 15 0		
T. Smith	829 10 6		
Grounds & Newton	829 6 9		

LONDON.—For convenience and shelter, Eltham Park, for the London County Council:—

W. Bickerton	£1,039 0 0
S. A. Douglass	969 0 0
A. N. Cole	955 0 0
J. G. Jarvis & Sons	898 0 0
Lole & Co.	879 0 0
G. H. Gunning & Sons	820 0 0
Spencer, Santo, & Co., Ltd.	797 0 0
C. R. Price	797 0 0
G. E. Wallis & Sons, Ltd.	792 0 0
G. Jennings, Ltd.	780 0 0
B. E. Nightingale	755 0 0
W. Pollock	750 0 0
E. A. Lowe & Co., Chislehurst, Kent*	698 0 0

[The estimate comparable with the tenders is £931.]

LONDON.—For the supply of 100,000 jarrah wood blocks required for use in the tramways department, for the London County Council:—

	Per 1,000 blocks.
Improved Wood Pavement Co.	£10 8 6
W. Griffiths & Co., Ltd.	10 6 0
Acme Flooring and Paving Co.	10 3 0
Millars' Karri and Jarrah Co. (1902), Ltd., Bishopsgate-street, E.C.*	10 2 6

LONDON.—For shelter and storage accommodation near bathing lake, Victoria Park, for the London County Council:—

J. F. Robey	£263	M. Cainan & Son	£216
Runham Brown Bros.	259	H. F. Webb & Co.	205
R. Woollaston & Co.	248	Newell & Lusty	202
Griggs & Son	242	G. Barker	198
W. Harbron	241	J. Barker & Co., Ltd.	196
Squire & Farrant	230	Kirk & Randall	189
G. E. Wallis & Sons, Ltd.	220	A. & F. Polden, Camden Works, Woodstock-road, Shepherd's-bush, W.*	182
F. Webster & Son	218		
Pasterfield & English	218		

LONDON.—For conveniences for women, Hackney Downs, for the London County Council:—

F. Bull	£475	R. Harding & Son	£327
Griggs & Son	388	J. Barker & Co., Ltd., 89, High-street, Kensington, W.*	307
F. & G. Foster	375		
W. Bickerton	370		

[The estimate comparable with the tenders is £330.]

LONDON.—For reconstruction of Mare-street bridge, for the London County Council:—

J. Mowlem & Co., Ltd.	£5,000 0 0
Westminster Construction Co.	4,960 14 1
J. Cochrane & Sons	4,833 8 5
Heenan & Froude, Ltd.	4,652 2 11
A. Handyside & Co., Ltd.	4,566 14 1
A. Thorne & Sons	4,485 19 10
Cleveland Bridge & Engineering Co., Ltd.	4,400 13 5
Dick, Kerr, & Co., Ltd., Cannon-street, E.C.*	4,216 19 4

[The Chief Engineer's estimate comparable with the above tenders is £4,293 5 3.]

LONDON.—For new school, Dingle-lane, Poplar, for the London County Council:—

G. Parker	£17,907 19 8
J. Appleby & Sons	14,933 0 0
W. Johnson & Co., Ltd.	14,876 0 0
C. Wall, Ltd.	14,788 11 9
A. E. Symes	14,631 0 0
J. & M. Patrick	14,488 0 0
Perry & Co.	14,116 0 0
G. Godson & Sons	14,004 0 0
Patman & Fotheringham, Ltd.	13,763 0 0
Treasure & Son, Ltd.	13,718 0 0
T. D. Leng	13,592 0 0
McCormick & Sons	13,542 0 0
E. Lawrance & Sons	13,461 0 0
Kirk & Randall	13,230 0 0
J. & C. Bowyer, Ltd., Upper Norwood*	12,948 0 0

[The estimate of the Architect (Education) comparable with the tenders is £13,696.]

LONDON.—For erection of special school, Farrance-street, Limehouse, for the London County Council:—

J. Garrett & Son	£7,236 0 0
W. Johnson & Co., Ltd.	7,108 0 0
W. Harris	7,062 0 0
C. Wall, Ltd.	6,870 15 1
J. & M. Patrick	6,806 0 0
W. Downs	6,793 0 0
G. Munday & Sons	6,732 13 8
J. Grover & Son	6,731 0 0
Patman & Fotheringham, Ltd.	6,723 0 0
Perry & Co.	6,582 0 0
J. Appleby & Sons	6,572 0 0
F. & T. Thorne	6,523 0 0
A. E. Symes	6,407 0 0
Holliday & Greenwood, Ltd.	6,349 0 0
Treasure & Son, Ltd.	6,315 0 0
Kirk & Randall	6,297 0 0
G. E. Wallis & Sons, Ltd.	6,274 0 0
E. Lawrance & Sons	6,272 0 0
T. D. Leng, Evelyn-street, Deptford*	6,257 0 0

[The estimate of the Architect (Education) comparable with the tenders is £6,345.]

LONDON.—For enlargement of school and erection of manual training centre, Mansfield-road, St. Pancras, N., for the London County Council:—

J. Parsons	£9,051 0 0
A. E. Symes	8,988 0 0
C. P. Roberts & Co.	8,917 15 0
L. Whitehead & Co., Ltd.	8,910 0 0
G. Godson & Sons	8,794 0 0
T. D. Leng	8,716 0 0
Treasure & Son	8,602 0 0
F. & T. Thorne	8,599 0 0
W. Johnson & Co., Ltd.	8,594 0 0
J. Chessum & Sons	8,590 14 4
E. Lawrance & Sons	8,561 0 0
J. & M. Patrick, Wandsworth*	8,412 0 0
W. Akers & Co., Ltd.‡	8,067 0 0

[The estimate of the Architect (Education) comparable with the tenders is £8,917.]
‡ Error in amount of tender.

LONDON.—For enlargement of Gloucester-road school, Camberwell, N., for the London County Council:—

G. Parker	£2,013 15 0
W. Downs	1,943 0 0
E. Triggs	1,786 0 0
J. Garrett & Son	1,716 0 0
Galbraith Bros.	1,705 9 10
W. Akers & Co., Ltd.	1,675 0 0
Holliday & Greenwood, Ltd.	1,666 0 0
J. Smith & Sons, Ltd.	1,631 0 0
W. Smith & Son	1,625 0 0
J. & C. Bowyer, Ltd., Upper Norwood*	1,549 0 0

[The estimate of the Architect (Education) comparable with the tenders is £1,740.]

LONDON.—For erection of special school, Carter-street, Mile End, for the London County Council:—

Brand, Pettitt, & Co.	£3,795 0 0
Perry & Co.	3,562 0 0
H. Kent	3,505 0 0
Stevens & Sons	3,458 0 0
Staines & Son	3,388 0 0
J. Chessum & Son	3,302 17 3
A. E. Symes	3,236 0 0
Kirk & Randall	3,195 0 0
F. & T. Thorne, Isle of Dogs*	3,111 0 0

[The estimate of the Architect (Education) comparable with the tenders is £3,202.]

LONDON.—For removing iron building and re-erecting on site at Clapham, for the London County Council Education Committee:—

T. J. Hawkins & Co.	£179 10	W. Harbrow, South Bermondsey*	£142 0
J. Harrison & Son	158 10		

LONDON.—For repairs to roads at the North-Western Fever Hospital, Lawn-road, Hampstead, N.W., for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

S. Lane & Co.	£226 0 0
J. Mowlem & Co., Ltd.	220 0 0
J. & W. Drake	216 10 0
T. Adams	213 0 0
W. H. Wheeler & Co., Ltd.	169 0 0
W. Griffiths & Co., Ltd.	156 0 0
F. G. Brummell	151 0 0
H. Woodham & Sons	147 0 0
T. Wood & Sons, Crockenhill, Swanley, Kent*	135 0 0

LONDON.—For tar-paving works at Brook Fever Hospital, Shooter's Hill, Woolwich, S.E., for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

Tilbury Contracting & Dredging Co., Ltd.	£185 19 6
T. Wood & Sons	255 0 0
Fry Bros.	208 0 0
H. Woodham & Sons	183 0 0
W. Farthing & Co.	180 0 0
Northern Quarries Co., Ltd.	171 10 11
A. C. W. Hobman & Co.	165 0 0
Chittenden & Simmons, Ltd.	152 0 0
F. G. Sheppard	144 17 2
J. Wainwright & Co., Ltd., Shepton Mallet, and 173, Maida-vale, W.*	129 18 0

LONDON.—For the erection of a new police-station at Carter-street, S.E. Mr. J. Dixon Butler, F.R.I.B.A., Surveyor to the Metropolitan Police, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Foster & Dicksee	£15,469	Lawrance & Son	£14,465
Rice & Sons	15,115	Sabey & Son, Ltd.	14,300
Holland & Hannen	14,620	Godson & Son	14,289
Lovatt, Ltd.	14,599	Ashby & Horner	14,271
Trollope & Sons and Colls & Sons	14,590	Lorden & Son	14,239
		Mowlem & Co., Ltd.	13,924
F. & H. F. Higgs	14,502	Appleby & Son	13,872
Prestige & Co., Ltd.	14,499	Grover & Son	13,793
Higgs & Hill, Ltd.	14,474		

LYDBROOK (Gloucestershire).—For erecting a public elementary school near Ross, for the Gloucestershire Education Committee. Mr. M. H. Medland, architect, 15, Clarence-street, Gloucester. Quantities by Mr. E. A. Fryer, 15, Clarence-street, Gloucester:—

—	Main Buildings.	Lightning Conductors.	Drainage and Water Supply.	Cookery, Laundry, and Manual Instruction Rooms.	—
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
H. Ash	2,749 0 0	19 16 0	164 18 0	777 0 0	3,710 14 0
F. Beech & Co.	3,559 0 0	23 10 0	134 0 0	815 0 0	4,531 10 0
W. Bowers & Co.	2,970 0 0	19 16 0	152 0 0	715 0 0	3,856 16 0
W. Crane Ltd., Nottingham*	2,594 16 8	18 16 8	132 9 9	684 17 0	3,430 19 5
A. J. Colborne	3,121 0 0	18 15 6	148 16 8	771 0 10	4,059 12 0
A. S. Cooke	2,870 1 7	19 16 0	119 10 6	682 4 2	3,691 12 3
G. Dimery & Sons	2,812 0 0	22 17 0	133 14 5	687 11 10	3,656 3 3
A. Estcourt & Sons	3,022 0 0	19 5 0	170 0 0	778 0 0	3,989 5 0
E. J. Flewelling	2,847 0 0	19 10 0	160 1 6	708 6 6	3,735 0 6
W. Jones	2,838 0 0	21 0 0	150 0 0	726 0 0	3,735 0 0
J. Long & Sons Ltd.	3,025 0 0	20 16 0	169 0 0	779 0 0	3,993 16 0
T. Mackie & Co.	3,500 0 0	20 3 0	238 10 11	673 6 8	4,434 19 4
W. T. Nicholls	2,845 0 0	19 5 0	149 0 0	724 10 0	3,737 15 0
E. W. Wilks & Son	2,838 0 0	19 0 0	128 0 0	663 0 0	3,648 0 0
E. Love	3,112 0 0	20 6 0	213 0 0	787 0 0	4,132 6 0

[It was decided not to provide lightning conductors.]

LOWER TOOTING.—For additional stabling and mess-rooms at the Anglo-American Laundry, Burmester-road, Lower Tooting, S.W., for the Dispatch Laundry Co., Ltd. Messrs. S. J. Reynolds & H. Hicks, architects, Reigate and Broadstairs:—

Joselyne & Young	£2,500	O. Kennard	£2,140
W. & C. Brown	2,366	A. G. Wright	2,068
W. Johnson & Co., Ltd.	2,227	Holliday & Greenwood, Ltd., Brixton, S.W.*	2,055
W. Akers & Co., Ltd.	2,167		
D. W. Barker	2,165		

LUMB CLOUGH.—For 5,000 yds. of main sewers in the bed of the River Ryburn, Lumb Clough, and along road at Triangle. Messrs. Utley, Hebblethwaite, & Utley, engineers, 10, Waterhouse-street, Halifax. Quantities by engineers:—

General Contract.

Ward & Totley, Bradford* £3,350 0

Iron Pipes.

J. Oakes & Co., Alfreton* 1,766 11

NORWICH.—For the erection of a secondary school, with alterations to existing buildings, at Eaton-road. Mr. C. J. Brown, architect and surveyor, Cathedral Offices, The Close, Norwich:—

G. E. Hawes & Son	£26,000	T. Gill	£24,589
W. J. Hannant	25,400	Spencer, Santo	24,312
J. Youngs & Son	25,370	C. Roper	24,300
T. H. Yelf	25,183	J. Hurn & Son, Surrey-street, Norwich*	24,174
J. Cracknell	24,895		
F. Bennett	24,600		

NOTTINGHAM.—For water supply works, Thorneywood Mount, for Freehold Land Association. Mr. J. Lamb, surveyor, Ashbourne-chambers, Nottingham:—

	No. 1.	No. 2. Stand Taps.
		s. d.
W. H. Barry	£677 5 0	.... 7 6
E. Sharpe	598 9 6	.... 6 0
Hull & Son	578 0 0	.... 7 0
Nottingham Plumbing Co.	555 0 0	.... 10 0
A. E. Knight	548 0 0	.... 9 0
H. Wheatley	532 0 0	.... 10 0
Richmond & Hobster, Nottingham*	520 0 0	.... 8 6
H. Shardlow	503 7 10	.... 10 6

ST. ALBANS.—For road works, Blenheim-road, St. Peter Rural, St. Albans, for the Rural District Council of St. Albans. Mr. Henry F. Menge, Surveyor, Town Hall-chambers, St. Albans. Quantities by Surveyor:—

W. Deamer	£1,098 0 9
A. E. Palmer	1,034 10 0
G. Bell & Sons	934 0 0
E. E. Cousins	925 5 5
Free & Sons	852 8 3
H. Williams, Hatfield-road, St. Albans*	751 18 6

[Surveyor's estimate, £782 12s. 6d.]

SCULCOATES.—For 4 miles 1,592 yds. of cast-iron water pipes, etc. (Preston Waterworks), for the Rural District Council. Mr. W. H. Wellsted, Engineer, Waterloo-chambers, Hull:—

J. Mofatt	£4,119 2 10
J. Sangwin	3,893 4 10½
Henderson & Wilson	2,378 7 0
B. Robinson	2,299 15 11
H. E. Buckley	2,246 0 0
Parker & Sharp	2,164 9 5
Langton & Son	2,131 3 8
J. R. Rutter & Son	2,054 18 3
Edwards & Co.	2,038 1 10
D. Ball & Co.	1,992 8 11
B. Firth	1,973 12 6
Fisher & Son	1,966 17 7
A. E. Knight	1,951 3 4
F. Mitchell & Son	1,951 1 9
A. Sykes	1,904 10 10
J. Brunton	1,891 16 11
T. C. Starkey	1,879 19 4
Robinson	1,878 9 3
W. L. Harrison	1,866 11 6
W. Pattison & Son, Ltd.	1,838 16 0
W. Jowett	1,824 17 8
H. H. Barry	1,771 12 6
Bushby & Son	1,768 2 2
G. Boyce	1,761 7 7
H. Medforth	1,760 11 7
A. M. Macdonald	1,741 9 6
W. E. Stocks	1,726 0 8
A. F. Jenkinson	1,683 11 3
W. H. Hill, Skegness†	1,610 6 8

SENGHENYDD.—For constructing 200 yds. of retaining wall and iron rail fencing at station-terrace, for Caerphilly Urban District Council. Mr. A. O. Harper, Engineer and Surveyor, Council Offices, Cardiff-road, Caerphilly:—

R. Webb & Son	£247 7 6
Hamilton & Millard	238 0 0
D. C. Jones	237 12 6
A. G. Collins & Co.	217 17 6
W. Watkins	215 0 0
Davies & Lloyd	208 0 0
J. Williams	204 2 6
T. B. Evans	193 16 3
W. J. Morgan, Penyrheol*	182 4 7

SOUTHWICK.—For private street works, Albert-road, for the Urban District Council. Mr. G. W. Warr, Surveyor, Town Hall, Southwick:—

W. Holman & Co.	£555 0 6
Bostel Bros., Ltd.	535 9 0
W. Swales	507 18 4
W. A. McKellar	469 0 0
Peerless, Dennis, & Co.	459 0 0
J. Parsons & Sons, 176, Church-road, Hove*	454 0 0

SOUTHWOLD.—For making-up certain roads on the West-End estate, for the Corporation. Mr. B. King, Borough Surveyor, Southwold:—

J. Thompson	£1,035 7 0	R. J. Allen & Son	£760 0 0
T. C. Starkey	856 2 4	J. C. Trueman, Swanley*	660 0 0
W. Church	801 0 5		
G. Doy	780 0 0		
E. J. Edwards	762 14 7		

SOUTHWOLD.—For making up Salisbury-road, for the Corporation. Mr. B. King, Borough Surveyor, Southwold:—

W. Church	£230 0 0	R. J. Allen & Son	£155 0 0
G. Doy	177 0 0	J. C. Trueman, Swanley*	130 0 0
J. Thompson	172 10 0		
T. C. Starkey	170 11 8		
E. J. Edwards	157 16 3		

WEMBLEY.—For the erection of a police-station at Wembley. Mr. J. Dixon Butler, F.R.I.B.A., Surveyor to the Metropolitan Police, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

Tennant & Co.	£6,082	Holloway Bros., Ltd.	£5,392
Musson & Son	5,735	Godson & Son	5,220
G. & J. Waterman	5,660	Grover & Son	5,219
E. Potterton	5,540	Fassnidge & Son	5,200
Willmott & Sons	5,477	H. Haynes	5,151
W. J. Dickens	5,476		

Ham Hill Stone.
Doulting Stone.
Portland Stone.

The Ham Hill and Doulting Stone Co., Limited (incorporating the Ham Hill Stone Co. and G. Trask & Son, The Doulting Stone Co.).

Norton, Stoke-under-Ham, Somerset.
London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,
PHOTOLITHOGRAPHERS,
4 & 5, East Harding-street,
Fetter-lane, E.C.

ALEXR. FINDLAY & CO., LTD.,
MOTHERWELL, SCOTLAND.
STEEL ROOF and BRIDGE BUILDERS, STRUCTURAL ENGINEERS.
SPECIALTY, ALL KINDS OF
HYDRAULIC PRESSED STEEL TROUGH FLOORING
For Road and Railway Bridges, Buildings, etc.
LONDON OFFICE: 9, VICTORIA STREET, S.W.

GRICE & CO., Ltd., STONE MERCHANTS,
ADDISON WHARF, 191, Warwick Rd., KENSINGTON.
Building & Monumental Stone
A LARGE STOCK OF BEST
CAEN Stone & Alabaster For HOME TRADE and EXPORT
in Block, Slab, and Scantling.

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER & TILER.
Penrhyn-Bangor.
Oakeley-Portmadoc.
BEST WORK ONLY.
Red Sandfaced Nibbed Roofing Tiles always in Stock.
Applications for Prices, etc., to
BETHNAL GREEN SLATE WORKS,
Bethnal Green, London, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
The best materials and workmanship are supplied by
THE
French Asphalte Co., Ltd.
Whose name and address should be inserted in all specifications.
For estimates, quotations, and all information apply at the Offices of the Company.
6, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

COPPER ROOFING
Zinc Roofing
"DROP DRY" GLAZING.
The Most Efficient and Economical System in the Kingdom.
DESIGNS and ESTIMATES FREE on application.
Telegrams: COURTEOUS, LONDON.
F. BRABY & CO., Ld.,
Telephone: North 2100 (3 lines).
Chief Offices: 352-364, EUSTON ROAD, LONDON, N.W.
Works: LONDON, LIVERPOOL, BRISTOL, GLASGOW, and FALKIRK.

REVIEWS OF BOOKS:

Monthly Supplement to "The Builder."

Books.

Architectural Education: A History of the Past and some Criticisms of the Present System, upon which are Founded some Suggestions for the Future, with Particular Reference to the Position of the Universities. By Wilfrid I. Travers, A.R.I.B.A. (London: Harrison, Jehring, & Co. 4s. net.)

There has been so much said and written on the subject of architectural education during the last few years that a short summary of the many criticisms and suggestions that from time to time have been offered, together with a handbook of the actual facilities at present existing for the training of architects, should be a useful addition to the literature on the subject. On that account we welcome Mr. Travers's book, although we must confess to having read it with somewhat mixed feelings. The work is hardly a good piece of literary planning, and its contentions, though they lead to conclusions in which we nearly always heartily concur, are rarely of themselves convincing. Its somewhat ambitious title, too, is misleading, for the so-called history is in reality only a bare catalogue of events, some of indifferent importance, upon which a true history might be based. Yet the compilation of this can only have been achieved after considerable pains, and, although we notice one or two minor inaccuracies, such as the placing of Professor Reilly's appointment to the Roscoe Chair of Art at Liverpool a year earlier than it actually took place, it is an instructive and useful diagram of events occurring over a period of more than seventy years. But to date the beginnings of architectural education as late as the year 1840, when a chair was founded for the "Arts of Construction" at King's College, London, is a mistake, for many young architects studied their art side by side with painters and sculptors in various private or semi-private academies nearly a hundred years before that date, though these all died a natural death after the founding of the Royal Academy in 1768. The latter Institution, although its educational efforts were for a long time not nearly as great as they ought to have been, nevertheless has annually provided lectures in architecture for students ever since its inception, a fact which Mr. Travers has not stated.

The third chapter, entitled "Existing Arrangements: some Criticisms and Suggestions," is interesting, and reviews the present state of affairs in a comprehensive fashion. It is a pity, though, that the author should have allowed himself to have been overcome by a kind of boyish passion for superlatives, which diminishes rather than increases the force of his arguments. For instance, to say that the condition of professional training for architects at the present moment can only be described as chaotic is too exaggerated to receive general acceptance, and, considering the knowledge he must have of the history of the movement, it is surprising that he should not see things in better perspective. Had his statement been that education is now only just emerging from chaos, it would have been more defensible; for he could have supported that with the instance that the Liverpool School, which he frankly and justly admires, is already well on the right road. At the same time he is quite right in condemning the want of system in the heterogeneous collection of institutions which at present attempt to give instruction in architecture. He rightly finds that the schools managed by the various architectural societies, of which the Architectural Association School is the most important, are by their very nature limited in scope, and, despite their best endeavours, cannot help turning out one-sided men. The technical schools, too, though doubtless excellent places for the training of joiners' apprentices, are quite unsuitable for the education of professional men. There remain only the Universities, and since these alone are capable of providing both a liberal education as well as a professional training, they are the only places suitable for the preliminary studies of an architect. But the scheme for a University course which Mr. Travers draws up is a disappointing one, and seems to be little more than a spiritless adaptation of the Liverpool curriculum. It altogether omits the mention of measured work; it does not make sufficient provision either for general æsthetics or pure science; while the making of the diseases of timber an important subject of study, to be spread over four years, would be quite ludicrous if it were not obviously a slip.

The real value of this book lies neither in its criticisms, in spite of their frequent acuteness, nor in its suggestions, which, by the way, are not so revolutionary in tendency as the motto on the title-page would seem to predict. It is to be found rather in this, that it is an excellent handbook, containing information about all the architectural schools in the Kingdom with an outline of their history and curricula. This, though humble spade work, is really useful, as is also the careful translation of the syllabus of the Ecole des Beaux-Arts, which appears in an appendix. As a handbook we have much pleasure in recommending it to all interested in the subject of architectural education, and we commend especially the careful indexing and copious foot-notes, which always enhance the value of a work of this nature.

Friedrich II. von Hohenstaufen und die Anfänge der Architektur der Renaissance in Italien. By Baron Heinrich von Geymüller. (München: F. Bruckmann. 1908. Price M.1.50.)

The author here publishes separately, in pamphlet form, the lately written Introduction to the summary of his monumental work, "Renaissance Architecture in Tuscany," 1884-1908. He states that his original Preface to the first part was written at a stage when he shared the then generally accepted opinions; but now he puts forth theories of his own based on mature experience and intimate acquaintance with his subject. More particularly has he probed the circumstances which rendered possible the epoch-making appearance of Brunelleschi. He was first struck by the fact that sculpture and painting under Niccolò Pisano, Cimabue, and Giotto were one hundred years in advance of architecture. This led to the inquiry, Is Brunelleschi's work so entirely without forerunners as is generally supposed? and much consideration of the question has amply proved the truth of Burkhardt's dictum, "The Renaissance had long been knocking at the door."

The pamphlet discusses the following points:—The three ideals which inspire the Renaissance; its cradle at the Court of Frederick II. in South Italy; the work of Niccolò Pisano; and the Renaissance under its gothicising garb up to the time of Brunelleschi.

But it is necessary to define accurately what elements entitle a work to the name Renaissance, and hence, when and where were the essential ingredients of the Renaissance first clearly combined. Baron Geymüller considers that the name Renaissance is too loosely applied, and should be restricted to work which unites both Gothic and Classic elements—a combination in which Gothic forms and principles are modified or partly replaced by something Classic. In the Art of the Renaissance we can distinguish three souls: the soul of Classic antiquity (Græco-Roman), the soul of Christianity, and the soul of the Northern peoples; and neither impulse can be disregarded in a study of the Renaissance, its characteristics, origin, and development.

Through his Italian mother, Frederick II. of Hohenstaufen united north and south in his person, and he thus becomes a symbol of the Renaissance which was to result from another similar combination. Southern Italy is considered to be the cradle of modern Italian, for Frederick established the "vulgar tongue" as the Court language; and similarly Southern Italy may be regarded as the cradle of the Renaissance. Frederick summoned to his Court French or French-trained architects, while at the same time he encouraged work on Classic lines; thus we find him building in the same year, 1240, the Gothic interior of the Castel del Monte and the classic Triumphal Arch at Capua. The impulse of the Renaissance may have been carried from the Court of Frederick by Niccolò Pisano into Tuscany—a view supported by the curious similarity of details found in Castel del Monte, in Prato, and in the pulpit at Pisa. These points are discussed at length and also illustrated in M. Emile Bertaux's "L'Art dans l'Italie Méridionale"—a work largely quoted by Herrn von Geymüller.

The Cathedrals and Churches of Norway, Sweden, and Denmark. By T. Francis Bumpus. (London: T. Werner Laurie. 1908.)

Not long ago Mr. Bumpus's interesting work on the churches of the Rhine and North Germany was reviewed in these columns, and the results of journeys further north are now given in a book, the title of which clearly defines its scope.

The architecture of Norway and Sweden is practically confined to the parts either on or near the southern coast line, and together with that of Denmark it has been largely influenced by the architecture of its neighbours, Germany, France, and England—chiefly by the former, in a lesser degree by the two latter. The buildings in Denmark, Sweden, and the Island of Gottland have naturally from their geographical position owed more to Northern Germany, and the almost universal use of brick has accentuated the similarity in many ways; the Swedish cathedral at Upsala is said to be partly the design of a French architect; while the church at Trondhjem, in Norway, has many details showing pretty clearly their English origin.

While none of the buildings in either kingdom can compare in scale or detail with

those of France, Germany, or England, and while the scarcity of good building stone and the use of granite, brick, and limestone has necessarily imposed great limitations on the detail, yet many of these churches must in their original state have been imposing from their very simplicity, and the large plastered surfaces of the brick walls were, no doubt, fully taken advantage of for the display of paintings. A good deal of colour decoration still fortunately remains, and also in many cases interesting fittings, stalls, and organ-cases. Ancient stained glass is found in the churches in the Island of Gottland, but practically none exists in those of Denmark or Norway.

In addition to the great Danish churches of Roëskilde and Odense is the Cistercian church at Soro with the simple plan and detail characteristic of that Order in all countries, still preserving some Renaissance fittings, a rood, and a fine tomb of Christopher II. and his Queen. At Kallundborg is a remarkable brick church in the form of a Greek cross with an octagonal tower at the end of each arm, and a fifth over the crossing, a photograph of which forms one of the most effective of the illustrations. In Sweden the chief churches are the four cathedrals of Lund (with a choir raised on a crypt which should be compared with Odense), Upsala, Linköping, and Strengas.

The chief building in the neighbouring kingdom of Norway is of course the cathedral at Trondhjem, although there is a good cathedral at Stavanger and other smaller Romanesque churches; and the curious wooden church at Hitterdal must also not be omitted. For some years past the cathedral at Trondhjem has been undergoing a process of "restoration," and the transformation that has been effected in its external appearance can be best realised by comparing the photographs given of it as it was and as it is. Doubtless every care has been taken to obtain authority for the new work, but we have certainly lost what was an exceedingly picturesque group in the process.

Space does not allow of a further close examination of these pages. We feel the want of plans—not necessarily more than sketch plans—of some of the churches described, but in spite of their absence, and of more illustrations of Wisby and Gottland, the work is of the greatest interest, and largely derives its value from the fact that it gives information obtained personally by an enthusiastic lover of churches about a district which, comparatively speaking, is a *terra incognita* to many.

There are forty illustrations, with one exception all from photographs we conclude taken by the author, that in the majority of cases give an excellent idea of the churches described, although some would have been more valuable if on a larger scale.

The Architects' Law Reports and Review. (Illustrated.) By Arthur Crow, F.R.I.B.A.; Legal Editor, A. F. Jenkin, of the Inner Temple, Barrister-at-Law. Vol. III. (London: Phipps & Connor. 1908.)

The third volume of "The Architects' Law Reports and Review," now published, is the continuation of a series which commenced in the year 1904, and the work is continued on the same lines as those adopted in the former volumes; the first part of the volume contains Acts of Parliament which are relevant to the subject matter of the work, with explanatory notes appended to the various sections, and also short articles on certain Bills before Parliament and other matter, whilst the second part is taken up with the reports of legal decisions arranged alphabetically as regards the subject matter and these reports are recognised law reports, as they are, by permission, reprinted from the *Law Times* and *Justice of the Peace*, but with the addition of certain plans and photographs. Each volume has an "Accumulated Subject Index," showing the titles and the subject matter of the cases contained in all the volumes now published, which facilitates reference, although the subject matter of each case is hardly set out at sufficient length to render this index a complete digest of the cases reported in all the volumes.

In the present volume the Public Health Acts Amendment Act, 1907, occupies most of the first part of the work, so far as it relates to matters within the province of those for whom these volumes are intended—Architects, Surveyors, Municipal and County Engineers, etc.—that is to say, the following parts of the Act are set out with notes to each section, and an index. Part I., which is of general application to England, Wales, and Ireland, exclusive of the administrative County of London; Part II., which relates to Streets and Buildings; Part III., Sanitary Provisions; and Part IX., Sky Signs. With the exception of Part I. the adoption of this Act is to a large extent optional, it being left to the local authorities to make application for leave to enforce its provisions in their districts. That portion of this work which deals with this Act especially commends itself to us, the sections of the Act appear to be well annotated, and there is a good index to the notes and to the Act, and, as we have had occasion to observe before, the authors in so treating the Acts of Parliament and more especially some of the Private Acts which are of more or less general application, are performing a very useful work. The remaining portion of the first part of this volume is taken up with short articles on sect. 45 of the Housing and Town Planning Bill and the London County Council General Powers Bill, and there are one or two reviews. With the observations on the Town Planning Bill we are not in agreement, as the suggestion that it should be extended to hamlets and villages appears to us impracticable, however desirable it may be in theory; but, apart from the merits of any particular question, may we venture to suggest to the authors that in a work which is intended as a permanent book of reference, articles on matters of passing interest may possibly be dispensed with, as whilst not substantially increasing its value they materially add to its bulk. Moreover, if some Bills before Parliament are selected for comment, the reader is led to look for others which he may deem of even greater importance, and we may instance the Building Operations and Engineering Works Bill, which finds no place in the present volume.

Some forty-three reports of cases decided in 1906-7 are included in this volume, and, like its predecessors, it should prove a valuable addition to the libraries of those for whom it is especially intended.

The Study of Sanitary Law. By E. G. Holmes, Associate Royal Sanitary Institute (by Examination), etc. (Chester: Frank H. Taberer. 1908.)

The object of this little work, as explained by the author in his preface, is to supply students of sanitary law, when studying for the Inspectors' examination of the Royal Sanitary Institute, with the necessary Acts of Parliament, By-laws, and Regulations, but the author also expresses the hope that it may prove useful to others engaged in the administration of sanitary law in Urban and Rural Districts. The subjects are arranged alphabetically, and the whole work comprises some 150 pages. To effect condensation the author has abbreviated the titles of the Acts and the designation of certain offices and officers by giving only initial letters. This makes the work appear a little cryptic, but the reader will soon become conversant with such obvious abbreviations. In one or two places we find the Public Health Acts Amendment Act, 1907, referred to as the "P. H. A., 1907," but according to the table of abbreviations it should be the "P. H. A. A." It is no doubt necessary that students should be conversant with the provisions of this Act, but it must be remembered that with the exception of Part I. it only becomes operative when applied to any district by order of the Local Government Board or the Secretary of State, as the case may be.

At the end of the volume will be found model By-laws issued by the Local Government Board for the guidance of local authorities.

Proceedings of the Incorporated Association of Municipal and County Engineers. Vol. xxxiv. Edited by Thomas Cole, A.M.Inst.C.E. (Secretary). (London: E. & F. N. Spon, Ltd. 1908.)

Among the many papers printed in this volume one of the most interesting to our readers is that on "Public Baths and Washhouses," by Mr. T. W. Aldwinckle, F.R.I.B.A. The paper contains a clear statement of the various features necessary in establishments of the kind and plans of the St. Pancras Baths, built under the direction of the author. Engineering equipment is discussed in a particularly satisfactory manner, this being a branch of architectural practice of which Mr. Aldwinckle has had much experience. Some "Notes on the Footbridge, Lock, and Weir, Richmond," by Mr. J. H. Brierley, are largely historical, but include a brief description of the works, and are illustrated by three plates of drawings giving full details of construction. A paper by Mr. J. Andrew on "Municipal Engineering Works at Dunoon" is chiefly noteworthy for the particulars given concerning the operation of mechanical filters in the Municipal Waterworks. Twelve 8 ft. diameter vertical type pressure filters are now in use, occupying a building which measures only about 48 ft. square, these filters being capable of doing far more work and doing it far better than the four filter beds previously used, and covering an area of more than 1,300 sq. yds. From the report of the annual meeting this year we learn that it is proposed to change the title of the Association to "The Institution of Municipal and County Engineers," an alteration which should be advantageous to this useful organisation.

Reinforced Concrete and some Facts Concerning the Kahn Trussed Bar. Second Edition. (Trussed Concrete Steel Company, Westminster. 1908.)

As the title indicates, this book is necessarily in the nature of an *ex parte* statement. At the same time, however, it embodies a series of notes which are of general applicability to reinforced concrete construction of every kind. The fundamental principles of reinforced concrete beams as summarised on page 10 lead up to the argument that "the Kahn bar seems to be the most ideal method of reinforcement yet invented." We have nothing to say against the Kahn bar, which is certainly ingenious, and has been used with perfect success and satisfaction, but it ought to be remarked that other methods of reinforcement are equally satisfactory, and are thought by some independent authorities to be as good, if not better, in practical work. The section entitled "Theory of Reinforced Concrete Work" contains a useful theoretical analysis based on the "straight-line" formulæ for beams, and numerous tables relating to the proportions of beams and floor slabs, reinforced by Kahn bars. Tables of columns and footings similarly reinforced are given in succeeding sections. A "Specification for Reinforced Concrete," a "Schedule of Allowable Floor Loads in accordance with the Building Laws of various Cities" (American), and a "Digest of Building Laws governing Reinforced Concrete" are of general technical interest; while the various structures illustrated in the remaining pages serve the purpose of showing the varied directions in which the Kahn bar has been applied to architectural and engineering works. The book is an excellent example of what may be termed the commercial literature of reinforced concrete.

Molesworth's Pocket-book of Engineering Formulæ. Twenty-sixth Edition. Revised and enlarged. (London: E. & F. N. Spon, Ltd. 1908.)

ARCHITECTS as well as engineers are so familiar with this indispensable collection of useful formulæ and memoranda that no introduction to the present issue is necessary on our part. As in recent years, Sir Guilford Molesworth, the original author, has had the assistance of Mr. H. B. Molesworth, M.Inst.C.E., in the revision of the main portion of the work, and of Mr. W. H. Molesworth, M.I.E.E., M.I.Mech.E., in respect of the Electrical Supplement. Notwithstanding the numerous additional subjects introduced, the bulk of the volume has been kept down almost to that of preceding editions by condensing portions which were needlessly diffuse, and by the use of thinner paper. The latter feature is not altogether an improvement, especially as nearly half the pages in the copy we have received are stuck together by the gilt edging and cannot be separated very easily. In a few respects the subject matter is a little unsatisfying, but it would be impossible for any book of the kind to escape such criticism. The new "Molesworth" is certainly worthy of its predecessors in every way, and bears ample evidence of the endeavours made to bring its contents thoroughly up to date.

Light and Air: A Text-Book in tabulated form for Architects, Surveyors, and others. By the late PROFESSOR BANISTER FLETCHER, F.R.I.B.A., etc. Fifth Edition; revised by BANISTER F. FLETCHER and H. PHILLIPS FLETCHER, F.R.I.B.A., etc. (London: B. T. Batsford. 1908.)

A LAWSUIT about rights of light and air has in it as large an element of uncertainty as a cricket-match or a horse-race. Learned judges deliver conflicting opinions about the same case. A higher court reverses the decision of the court below, and is in turn overruled by the court above it. Sometimes a good case is lost by bad presentation, and a bad case well argued proves victorious. To everyone concerned — except the litigants themselves—it is a most interesting sport, and to those "architects, surveyors, and others" who wish to make themselves proficient exponents of it, Professor Fletcher's book can be thoroughly recommended. It has been ably revised by his sons and brought up to date. The well-known case of Colls *v.* Home and Colonial Stores (1904) has no fewer than thirty-six pages devoted to it; and more recent cases, such as Ambler *v.* Gordon (1905) and Kine *v.* Jolly (1907), are fully considered. Much good advice as to the evidence required, the preparation of drawings, and the legal difficulties is given by the authors. The book contains twenty-seven plates of diagrams prepared for different cases, and there is also a full index. Altogether it is a concise and useful book on a very difficult subject.

The Theory and Design of Structures. By EWART S. ANDREWS, B.Sc.Eng.(Lond.). (London: Chapman & Hall. 1908.)

A GOOD many books have already been written on the subject here discussed, but the contents of the text-book written by Mr. Andrews constitute a sufficient justification for its existence. After disposing of necessary preliminaries, the author considers the theory of beams in a series of six chapters, all well illustrated by diagrams and worked examples, the latter being an important feature of the work. Framed structures, columns, suspension bridges, arches, and masonry structures are carefully but more briefly dealt with; and a chapter is included on "Reinforced Concrete and Similar Structures." While the author's treatment of reinforced concrete appears to be quite reliable, and will probably be clear to those approaching the subject with a clear mind, the unfamiliar symbols employed, and the unfamiliar algebraical forms in which familiar equations are written, provide an additional reason for standard notation and formulæ for the new structural material. The last three chapters are devoted to the design of steelwork for buildings, roofs, bridges, and large girders. All these chapters are good, but we may specially commend the first of the series to architects, who will find therein some useful notes on foundations of different kinds, transverse bracing for buildings, and "fireproof" construction. The book is one we have pleasure in commending to our readers.

Cement Laboratory Manual. By L. A. WATERBURY, C.E., Professor of Civil Engineering, University of Arizona. (New York: John Wiley & Sons; London: Chapman & Hall. 1908.)

ALTHOUGH written primarily for students taking the cement laboratory course in the University of Illinois, this little book should be found of value to cement-users generally, particularly in view of the fact that standard specifications for Portland cement are usually deficient in the respect that they do not include a complete set of instructions for making the tests prescribed. The author gives in Chapter II. a good illustrated description of the apparatus required in a cement-testing laboratory; and in Chapter III. he deals with a complete series of tests, explaining the method of operation in each case. The volume is concluded by three appendices, containing the recommendations on cement testing published by the American Society of Civil Engineers, the American Society for Testing Materials, and the New York section of the Society for Chemical Industry.

The Encyclopædia of Practical Engineering. Edited by JOSEPH G. HORNER, A.M.I.Mech.E. Vol. VIII. (London: Virtue & Co.)

THIS issue, dealing with subjects coming within the alphabetical division ROP-SPE, very much resembles the instalments previously reviewed in our columns. "Sand-Blasting" is not quite a happy title for the article on sand-blast apparatus, which, in addition to the purposes mentioned by the author, is very useful in building and engineering construction. "Saws," "Saw Guards," "Saw Sharpening," and "Saw Sharpening Machines" are fully and, on the whole, satisfactorily discussed. The article on "Screw Threads" contains a convenient diagram representing various British, American, and foreign standards; under the head of "Shafting" architects will find some hints on the erection of shafting for power transmission; the "Slide Rule" is clearly described and its use illustrated by excellent facsimile drawings; methods of "Slinging" are well illustrated, and so also are "Smith's Tools"; the "Smoke Prevention" problem is briefly considered; and, as in preceding volumes, there is a large and varied collection of data concerning machine tools and work pertaining to mechanical engineering.

Haworth's Practical Timber Measurer and Architect's and Builder's Tables. (London: *The Timber News* Office.)

THIS is a very useful little book of 100 pages. It contains a short article on "Architects and Timber Specifications," and explains the various methods of measuring timber. There are several tables relating to the St. Petersburg standard, including lengths of various scantlings in a standard, prices per standard and per foot run, etc. Information is given about slating laths, boards, weight of timber, rates of carriage and cartage, and other details of the timber merchant's and builder's business, and there are tables of wages, and of the weights of iron bars and pipes and of lead pipes. It would have been better if some explanation had been given of the "short methods of obtaining the St. Petersburg standard"; we are told that "these methods will appeal chiefly to the expert," but really the expert is able to make short cuts in calculation like these for himself, and, if they are worth printing, the simple explanation ought also to be given.

A Handbook for Cement Works' Chemists. By FRANK B. GATEHOUSE, F.C.S. (London: Charles Griffin & Co., Ltd. 1908.)

THIS is a book for the laboratory, not for the office or study. It consists mainly of very concise instructions for the analysis of cements and the raw materials used in cement manufacture. It is not, we think, sufficiently explanatory to be of much service to the majority of students of building construction, but technical chemists interested in cement testing and young chemists engaged in cement works will find it useful. The book contains only five short chapters and an appendix, and one of the chapters is devoted entirely to instructions relating to the analysis of fuel, lubricants, water, and kiln gases.

The Slide Rule. By CHARLES N. PICKWORTH, Wh.Sc. Eleventh Edition. (Manchester: Emmott & Co., Ltd.; London: Whittaker & Co.)

AN enlarged edition of a very clear and practical guide to the use of numerous slide rules and calculators. The new matter now introduced should recommend the book even to those possessing copies of former issues; but we really cannot understand why the author continues to neglect the addition of a proper index, the absence of which seriously impairs the value of the work for the purposes of reference.

Woodwork. By J. F. BAILY and S. POLLITT. (London: John Murray. 1908.)

THIS little book is a step in the right direction. It consists of a graduated series of sixty lessons in woodwork for boys. Each lesson is a combination of the bench and the drawing-board, and in addition a number of simple questions are set, to which answers are given at the end of the lesson. The system is a model of direct instruction which will enable a student to master the foundations of his work.

The only fault to be found in the book is in Part II., dealing in advanced work, when mouldings and question of design come into prominence.

MAGAZINES AND REVIEWS.

THE most important paper in the *Burlington Magazine* is that on "The Art of Sparta" by Mr. Guy Dickins (a student, we presume, of the British School at Athens), which is accompanied by a number of illustrations of objects found in the exploration of the sanctuary of Artemis Orthia and elsewhere. These are all examples of archaic art, in which we see the same kind of rude sculpture, side elevations of animals and figures with the heads turned round so as to show the face, as in the well-known Gorgon metope from Selinus. It is odd, too, to find a group of the Lapith and a dying Centaur which seems like a rude and naive prophecy of a Parthenon metope. The number includes "Notes on Oriental Carpet Patterns" by Miss Heningham (Part II.) and "Notes on the Pinakothek at Munich" by Mr. Roger Fry, a review of a book on the subject by Professor Karl Voll.

The *Art Journal* contains some notes by Mr. Rudolf Dircks on "Some Public Memorials of Vienna" (an outcome of the Congress of Architects), accompanied by reproductions from pencil drawings by Mr. Rickards, which we need not say are of a high order—quite models of pencil sketching, in fact. Mr. E. C. Clifford continues his Nature-Study series with an article on "Weeds and Waste Places," which, as he says, have their own beauties, as he shows in a sketch of "Building Land"—in the country, not in a street; in towns, indeed, building land is generally a scene of unmitigated ugliness and squalor.

Mr. Alexander Millar contributes an article, the first of a series, on "Colour-Training and Colour Museums"; the latter certainly a new idea, and worth considering. As a nation we are not much endowed with the sense of colour; but there is no doubt that this may be, and in some cases is, developed to a great extent by cultivation. Mr. Watts and Sir E. Burne-Jones both supported the author's idea of a colour-museum, *i.e.*, a collection of objects of special beauty of colouring. The Christmas number of the *Art Journal* is devoted to the works of Mr. Seymour Lucas, of which many engravings and three colour-prints are given.

The *Architectural Record* (New York) publishes the third of a series of articles on the work of the late Leopold Eidlitz, who was evidently both a very clever and a very successful man, but we should conclude that the man in him was superior to the artist. Some of his quoted remarks are admirable for point and significance, yet the numerous illustrations certainly do not show the work of a refined artist; there is an element of showiness and superficiality about them, and they represent a period of architectural taste which has (fortunately) passed away. "German City Planning" (II.) by Cornelius Curlitt (translated from the German), assumes that the Germans specially understand this subject, but is illustrated by plans many of which are what we call "rabbit-warren planning." The French are the people who understand this subject, not the Germans. Mr. Frothingham's contribution (second part) on "Greek Architects, Contractors, and Building Operations," is a valuable *résumé* of what can be known on this subject, and is worth careful reading. In regard to the attribution of Greek buildings to special architects he observes that there were various ways by which authors such as Varro, Strabo, Pliny, Vitruvius, or Pausanius, could obtain reliable data:—

"First, the numerous *monographs* by Greek architects, which were freely circulated; second, the *contracts* for all public buildings inscribed on marble, built into a public monument and including the architect's name; third, the annual *accounts* of the commissioners overseeing the erection or restoration of any public monument, in the text of which the amounts paid to the architects were included; fourth, the public *decrees* or other *inscriptions*, honoring architects for especially meritorious work; fifth, *memorials* dedicated to architects, in the form of statues, buildings, etc.; sixth, passages in *contemporary writers*.

Of all these sources the contracts and accounts gave the most abundant material. In the case of the great sanctuaries at Delos, Delphi, Eleusis, the names of the architects in charge are given every year. In this way the authorship of even the least important work was public knowledge."

In *Concrete and Constructional Engineering* Mr. George Brohmer, of Copenhagen, deals with "The Historical Evolution of Reinforced Concrete in Denmark," illustrating bridges and other structures completed during recent years in that country. Dr. Desch continues his article on "Testing Laboratories for Concrete and Cement," describing the establishments of three commercial firms. Mr. H. Kempton Dyson contributes a further instalment describing the progress of "Concrete Block-Making in Great Britain," giving illustrations of various types of block-making machines, and of houses built of concrete blocks. "Concrete-Making Machinery," Part II., by Dr. John S. Owens, is devoted mainly to the description of concrete-mixing apparatus. "Don'ts on Concrete," by Mr. H. T. Desch, is a brief contribution whose usefulness is inversely proportionate to its length, and which we gladly commend to the notice of concrete-users.

The *Illuminating Engineer* contains a number of mostly rather brief communications on points connected with lighting, all of which are treated in a scientific spirit and give practical information. The lighting of buoys and beacons by means of acetylene, for periods varying from two months to a year without recharging, is the subject of a communication from an engineer. Among the most important articles are those on "The Cost of Street Illumination" and on the lighting installations of the Carnegie Libraries in New York, with full plans and statistics. The *Illuminating Engineer* is a publication which ought to be very useful to architects.

In the *Reliquary and Illustrated Archæologist* Mr. Charles Wall has an article on "St. Peter ad Murum," the little Saxon church in Essex, used as a barn, and built across the foundations of a Roman camp wall and of the Pretorian Gate. A plan and sketches are given. "The Volto Santo of Lucca," the early carved head of Christ still regarded at Lucca as an object of special devotion, is the subject of an article by Miss Elizabeth Haig. The head, of which an illustration is given from an engraving by Sanducci (it is not allowed to be photographed), is said to be the only one existing of the six likenesses of Christ accepted as authentic by the mediæval church.

In the *Antiquary* is a paper on "Some Ancient Norfolk Almsboxes," with sketches of four; that at Dersingham Church, with its solid square wooden column and projecting feet, is a very characteristic piece of mediæval work. Mr. G. Bailey contributes an article on some Renaissance carving at Rising Castle, Norfolk. The Norman keep here, as he observes, seems hardly the place where one would look for carvings of the Italian revival; but there is a carved oak door fixed, originally made for a doorway with a Tudor arch, and with six carved panels of Renaissance foliage with medallion heads in the centre of each. A drawing of these is given. From their marked personality of character the heads are evidently portraits.

The *Century* contains a rather interesting paper by Mr. Christian Brinton on "The Case for American Art." As he says, American art in the first instance had perforce to come from over-seas; it was a transplanted thing. He implies that during the last ten years only has there been something like a dawning of a national art. In regard to architecture, however (which he does not touch on), America seems to have been doing its best to keep national art at a distance by persistently Frenchifying its architecture and its architectural education.

It is gratifying to meet, in *Scribner*, with an article on "The Greatness of Raphael," by Mr. Kenyon Cox. The habit of the modern art-critic is systematically to belittle Raphael. Mr. Cox, in a considerate and thoughtful article, adopts the conclusion that, though Raphael is surpassed in certain qualities by other painters, the old belief in him as the greatest of designers was not far wrong.

Harper gives a pleasant article on "The Seine," with sketches by André Castaigne, many of them very charming, but he has done no justice to the monumental railway bridge at Passy, built on the road-way of the older bridge.

Just Published. 120 pages, with 9 Plates of Diagrams. 2s. 6d. net.

AN ELEMENTARY MANUAL OF BUILDING INSPECTION; or, How to Become a Building Inspector. By WM. B. PURCHASE, Building Inspector to the Borough of Hove, Author of "Practical Masonry."
London: CROSBY LOCKWOOD & SON, 7, Stationers' Hall-court, E.C., and 121A, Victoria-street, S.W.

4s. secures this Book!

"A Book which every young Architect should possess. It will be invaluable to him."—*The Builder, September 12.*

THE MODERN PLUMBER AND SANITARY ENGINEER is a complete, authoritative, and plainly written work for all builders, plumbers, and sanitary engineers, compiled by 16 specialists under editorship of Mr. G. LISTER SUTCLIFFE, A.R.I.B.A. It explains practically, and illustrates clearly, every branch of up-to-date plumbing and sanitation. Also it covers ventilation, gas-fitting, electric fittings, and fire alarms. The endorsement of *The Builder, Building World, The Plumber and Decorator*, the whole building press, and the heads of the profession, **guarantee** the books to you. Not one word is mere theory. Only the latest and best processes are described, experts in each branch supplying all information.

Each volume contains 170 pages of text, printed on strong and good paper. Each has about 200 illustrations, 12 large plates (many coloured). The volumes are beautifully bound in dark green cloth, and measure 10 in. by 7 in.

4s. sent to-day with order for complete work will bring the volumes, carriage paid (in U.K.); balance of net price (36s.) is accepted by monthly sums of same small amount. At least, you should write for the "Important" booklet we have prepared, for these books can help you to succeed. Write TO-DAY.

The Gresham Publishing Company,
43, Southampton St., Strand, London, W.C.

Messrs. BELL'S BOOKS on ARCHITECTURE.

A Full Illustrated Catalogue of Architectural Books will be sent to any Address on application.

Royal 4to. **42s.** net.

DOMESTIC ARCHITECTURE IN ENGLAND IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES.

A Selection of Examples Drawn and Photographed for the use of Architects. By HORACE FIELD and MICHAEL BUNNEY. With Introduction and Notes.

"The book is one a young architect should have. It would prove a good influence, and prevent his running riot."—*Manchester Guardian.*

Imp. 8vo. 2 Vols. **30s.** net.

A HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND (A.D. 1500-1800).

By REGINALD BLOMFIELD, M.A. With 150 Illustrations drawn by the Author and 100 Plates from Photographs and Old Prints and Drawings.

"A distinctly valuable addition to any architect's library. . . . He has given his treatment of the subject a detailed individuality: his drawings are correct, spirited and detailed, always bright and appreciative, while his writing is entertaining, comprehensive, and seldom over-dogmatic."—*Building News.*

Post 8vo. **7s. 6d.** net.

A SHORT HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND (A.D. 1500-1800).

By REGINALD BLOMFIELD, M.A. With 134 Illustrations.

Imp. 8vo. **31s. 6d.** net.

A HISTORY OF GOTHIC ART IN ENGLAND.

By E. S. PRIOR. With 340 Illustrations, mostly drawn by G. C. HORSLEY.

"The breadth of grasp which characterises Mr. Prior's treatment of his subject makes this a book which should be of real value to the student of English Gothic."—*Athenæum.*

Crown 8vo. **5s.**

STUART & REVETT'S ANTIQUITIES OF ATHENS AND OTHER MONUMENTS OF GREECE

To which is added a Glossary of Terms used in Grecian Architecture.

With 71 Plates engraved on steel, and numerous wood-cut Capitals.

Crown 8vo. **1s. 6d.** net each.

BELL'S HANDBOOKS TO THE CATHEDRALS AND ENGLISH CHURCHES.

42 Volumes now ready. Profusely Illustrated. (Full List on application.)

"We should imagine architects and students of architecture will be sure to buy the series as they appear."—*British Architect.*

Crown 8vo. **2s. 6d.** each net.

BELL'S HANDBOOKS TO CONTINENTAL CHURCHES.

6 Volumes now ready. Illustrated. (List on application.)

London: GEORGE BELL & SONS, Portugal Street, Kingsway, W.C.

London: Printed for the Proprietors of "THE BUILDER" by HORACE COX at Windsor House Printing Works, Bream's-buildings, E.C., and Published by JOHN MORGAN at the Office of "THE BUILDER," No. 4, Catherine-street, Strand, W.C.—November 14, 1908.